

# **FUSION III DVR**

## **Digital Recording and Transmission System**

### **User Guide**

ISSUE	DATE	REVISIONS
1	June 2006	Initial Release
2	August 2006	Updated for content

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## FCC COMPLIANCE STATEMENT

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**INFORMATION TO THE USER:** THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

**CAUTION:** CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

### **OPERATION OF THIS DEVICE IS SUBJECT TO THE FOLLOWING CONDITIONS:**

- THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.
- THIS DEVICE MUST ACCEPT INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.
- CABLES USED WITH THIS DEVICE MUST BE PROPERLY SHIELDED TO COMPLY WITH THE REQUIREMENTS OF THE FCC.
- YOU ARE CAUTIONED THAT ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED IN THIS MANUAL COULD VOID YOUR AUTHORITY TO OPERATE THIS EQUIPMENT.

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USERS OF THE PRODUCT ARE RESPONSIBLE FOR CHECKING AND COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND STATUTES CONCERNING THE MONITORING AND RECORDING OF VIDEO AND AUDIO SIGNALS. HONEYWELL VIDEO SYSTEMS SHALL NOT BE HELD RESPONSIBLE FOR THE USE OF THIS PRODUCT IN VIOLATION OF CURRENT LAWS AND STATUTES.

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## NATIONAL POWER DEVIATION STANDARDS

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### AUSTRALIA / NEW ZEALAND

COMPONENTS COMPLY WITH THE RELEVANT PORTIONS OF IEC 60950 OR THE APPLICABLE COMPONENT STANDARD OR THE RELEVANT AUSTRALIAN / NEW ZEALAND STANDARD.

AC POWER DISTRIBUTION SYSTEMS CLASSIFIED AS TT OR IT ARE NOT ALLOWED INTENDED FOR USE ON A TN SYSTEM.

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Rated  
Current of  
Equipment  
(A)

Nominal  
cross-sectional  
area  
(mm<sup>2</sup>)  
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0.2	<=	3 0.5*
3	<=	7.5 0.75
7.5	<=	10 (0.75) 1.00
10	<=	16 (1,0) 1.5
16	<=	25 2.5
25	<=	32 4
32	<=	40 6
40	<=	63 10
63	<=	80 16
80	<=	100 25
100	<=	125 35
125	<=	160 50
160	<=	190 70
190	<=	230 95

### DENMARK

CERTAIN TYPES OF CLASS I APPLIANCES MAY BE PROVIDED WITH PLUG NOT ESTABLISHING EARTHING CONTINUITY WHEN INSERTED INTO DANISH SOCKET-OUTLETS.

**"VIGTIGT !**

**LEDEREN MED GRØN/GUL ISOLATION MÅ KUN**

**TILSLUTTES EN KLEMME MÆRKET**

**(IEC 417, NO. 5019) ELLER (IEC 417, NO. 5017)**

**FOR TILSLUTNING AF DE ØVRIGE LEDERE, SE MEDFØLGENDE  
INSTALLATIONSVEJLEDNING**

SUPPLY CORD OF SINGLE-PHASE EQUIPMENT HAVING A RATED CURRENT NOT EXCEEDING 13 A SHALL BE PROVIDED WITH A PLUG ACCORDING TO THE HEAVY CURRENT REGULATIONS, SECTION 107-2-D1. CLASS I EQUIPMENT PROVIDED WITH SOCKET-OUTLETS WITH EARTH CONTACT OR WHICH ARE INTENDED TO BE USED IN LOCATIONS WHERE PROTECTION AGAINST INDIRECT CONTACT IS REQUIRED ACCORDING TO THE WIRING RULES SHALL BE PROVIDED WITH A PLUG IN ACCORDANCE WITH STANDARD SHEET DK 2-1A OR DK 2-5A. IF POLY-PHASE EQUIPMENT AND SINGLE-PHASE EQUIPMENT HAVING A RATED CURRENT EXCEEDING 13 A IS PROVIDED WITH A SUPPLY CORD WITH A PLUG, THIS PLUG SHALL BE IN ACCORDANCE WITH THE HEAVY CURRENT.

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## **GERMANY**

(GESETZ UBER TECHNISCHE ARBEITSMITTEL (GERÄTESICHERHEITSGESETZ) [LAW OF TECHNICAL LABOUR EQUIPMENT {EQUIPMENT SAFETY LAW}], OF 23RD OCTOBER 1992, ARTICLE 3, 3RD PARAGRAPH, 2ND SENTENCE, TOGETHER WITH THE "ALLGEMEINE VERWALTUNGSVORSCHRIFT ZUR DURCHFÜHRUNG DES ZWEITEN ABSCHRITTS DES GERÄTESICHERHEITSGESETZES" [GENERAL ADMINISTRATIVE REGULATION ON THE EXECUTION OF THE SECOND SECTION OF THE EQUIPMENT SAFETY LAW], OF 10TH JANUARY 1996, ARTICLE 2, THE PARAGRAPH, ITEM 2).

## **KOREA**

PLUGS FOR THE CONNECTION OF THE APPARATUS TO THE SUPPLY MAINS COMPLY WITH THE KOREAN REQUIREMENT (KSC 8305).

EMC - THE APPARATUS SHALL COMPLY WITH THE RELEVANT CISPR STANDARDS.

## **SWITZERLAND**

SUPPLY CORDS OF EQUIPMENT HAVING A RATED CURRENT NOT EXCEEDING 10 A SHALL BE PROVIDED WITH A PLUG

COMPLYING WITH SEV 1011 OR IEC 60884-1 AND ONE OF THE FOLLOWING DIMENSION SHEETS:

SEV 6532-2.1991, PLUG TYPE 15, 3P+N+PE 250/400 V, 10 A

SEV 6533-2.1991, PLUG TYPE 11, L+N 250 V, 10 A

SEV 6534-2.1991, PLUG TYPE 12, L+N+PE 250 V, 10 A

IN GENERAL, EN 60309 APPLIES FOR PLUGS FOR CURRENTS EXCEEDING 10 A. HOWEVER, A 16 A PLUG AND SOCKET/OUTLET SYSTEM IS BEING INTRODUCED IN SWITZERLAND, THE PLUGS OF WHICH ARE ACCORDING TO THE FOLLOWING DIMENSION SHEETS, PUBLISHED IN FEBRUARY 1998:

SEV 5932-2.1998, PLUG TYPE 25, 3P+N+PE 230/400 V, 16 A

SEV 5933-2.1998, PLUG TYPE 21, L+N 250 V, 16 A

SEV 5934-2.1998, PLUG TYPE 23, L+N+PE 250 V, 16 A

## **UNITED KINGDOM**

THE CURRENT RATING OF THE CIRCUIT SHALL BE TAKEN AS 13 A, NOT 16 A.

RATING OF CIRCUIT UNDER TEST WAS TAKEN TO BE 20 A.

APPARATUS WHICH IS FITTED WITH A FLEXIBLE CABLE OR CORD AND IS DESIGNED TO BE CONNECTED TO A MAINS SOCKET CONFORMING TO BS 1363 BY MEANS OF THAT FLEXIBLE CABLE OR CORD AND PLUG, SHALL BE FITTED WITH A "STANDARD PLUG" IN ACCORDANCE WITH STATUTORY INSTRUMENT 1786: 1994 - THE PLUGS AND SOCKETS ETC. (SAFETY) REGULATIONS 1994, UNLESS EXEMPTED BY THOSE REGULATIONS. NOTE: "STANDARD PLUG" IS DEFINED IN SI 1786: 1994 AND ESSENTIALLY MEANS AN APPROVED PLUG CONFORMING TO BS 1363 OR AN APPROVED CONVERSION PLUG.

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## RACK MOUNT INSTRUCTIONS

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- A) Elevated Operating Ambient – If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.
- B) Reduced Air Flow – Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- C) Mechanical Loading – Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- D) Circuit Overloading – Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- E) Reliable Earthing – Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

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## UL NOTICE

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Underwriters Laboratories Inc. has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock and casualty hazards as outlined in UL's Standard for Safety UL 60950-1. UL Certification does not cover the performance or reliability of the security or signaling aspects if this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT.

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## CE NOTICE

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This product is in conformity with the following European Directives:

**ELECTROMAGNETIC COMPATIBILITY DIRECTIVE**, 89/336/EEC  
(as amended by 92/31/EEC and by Article 5 of 93/68/EEC)

**per the provisions of:**

EN 55022:1994	EN 55024:1998	EN 61000-4-4:1995
EN 61000-3-2:1995	CISPR 24:1997	EN 61000-4-5:1995
EN 61000-3-3:1995	EN 61000-4-2:1995	EN 61000-4-6:1995
CISPR 22:1997	EN 61000-4-3:2002	EN 61000-4-11:1994

**LOW VOLTAGE DIRECTIVE**, 73/23/EEC  
(as amended by Article 13 of 93/68/EEC)

**per the provisions of:**

EN 60950-1: 2001

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**EN 50130-4:1996 Notice**

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1. Uninterrupted Power supply (UPS)
2. Maximum lengths of wiring connected to the sensor inputs and control outputs are 30 meters.

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**EN 55022 CLASS A Notice**

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**WARNING**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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## OPTICAL AND ACOUSTICAL STATEMENTS

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### VISIBLE LED STATEMENT

The LEDs on this DVR unit are classified as "Class 1 LED Product" in accordance with EN 60825-1.

### LASER SAFETY STATEMENT FOR A CLASS 1 LASER PRODUCT

This CD-ROM Storage device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference. If this equipment does cause harmful interference to radio or television reception, the user is can attempt to correct this by following one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

The mass storage system does not product hazardous laser radiation. Because laser light emitted inside the mass storage system is completely confined within the protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.



**CAUTION:** Due to the extremely fast rotation speed of the CD-ROM drive spindle motor (9000 ~ 12000 rpm), the drive's performance could be affected by using substandard discs. These substandard discs may be damaged, or damage the CD-ROM drive.

- Check each CD for cracks before using it. If there are cracks on the surface, especially on the border of the center hole, do not use it in the CD-ROM drive. Using such CDs can cause irreparable damage to the CD-ROM drive.
- Do not leave CDs in direct sunlight or hot, humid locations.
- Always remove CDs from the drive after use.
- To protect CDs from scratches, never touch the CD face or place the CD face down on a hard surface.
- Do not affix highly adhesive stickers to a CD.

### VISIBLE LED STATEMENT

Lpa < 70 dB operator position, normal operation, per ISO 7779.



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## IMPORTANT SAFEGUARDS

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1. **Read Owner's Manual** – After unpacking this product, read the owner's manual carefully, and follow all the operating and other instruction
2. **Power Sources** – This product should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home or business, consult your product dealer or local power company
3. **Ventilation** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
4. **Heat** – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.
5. **Water and Moisture** – Do not use this product near water. Do not exceed the humidity specifications for the product as detailed in the Appendix section in this manual
6. **Cleaning** – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
7. **Power Cord Protection** – Power-supply cords should not be routed so that they are not likely to be walked on or pinched by items placed against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
8. **Overloading** – Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electrical shock.
9. **Lightning** – For added protection for this product during storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power line surges.
10. **Object and Liquid Entry Points** – Never insert foreign objects into the DVR unit, other than the media types approved by Honeywell, as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the product.
11. **Accessories** – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious personal injury and serious damage to the product.
12. **Disc Tray** – Keep your fingers well clear of the disc tray as it is closing. Neglecting to do so may cause serious personal injury.
13. **Burden** – Do not place a heavy object on or step on the product. The object may fall, causing serious personal injury and serious damage to the product.
14. **Disc** – Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

15. **Damage Requiring Service** – Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
  - a. When the power-supply cord or plug is damaged.
  - b. If liquid has been spilled, or objects have fallen into the unit.
  - c. If the unit has been exposed to rain or water.
  - d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
  - e. If the unit has been dropped or the enclosure has been damaged.
  - f. When the unit exhibits a distinct change in performance - this indicates a need for service.
16. **Servicing** – Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified personnel.
17. **Replacement Parts** – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
18. **Safety Check** – Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

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## NOTES ON HANDLING

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- When shipping the DVR unit, the original shipping carton packing materials come in handy. For maximum protection, repack the unit as it was originally packed at the factory.
- Do not use volatile liquids, such as insect spray, near the DVR unit. Do not leave rubber or plastic products in contact with the DVR unit for long periods of time. They will leave marks on the finish.
- The top and rear panels of the DVR unit may become warm after long periods of use. This is not a malfunction.

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## NOTES ON LOCATING

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- Place the DVR unit on a level surface. Do not use it on a shaky or unstable surface such as a wobbling table or inclined stand.
- When you place this DVR unit next to a TV, radio, or VCR, the playback picture may become poor and the sound may be distorted. If this happens, place the DVR unit away from the TV, radio, or VCR.

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## NOTES ON CLEANING

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- Use a soft dry cloth for cleaning.
- For stubborn dirt, soak the cloth in a weak detergent solution, wring well and wipe. Use a dry cloth to wipe it dry. Do not use any type of solvent, such as thinner and benzene, as they may damage the surface of the DVR unit.
- If you use a chemical saturated cloth to clean the unit, follow that product's instructions.

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## NOTES ON MAINTENANCE

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This DVR unit is designed to last for long periods of time. To keep your DVR unit always operational we recommend regular inspection maintenance (cleaning parts or replacement). For details contact your nearest dealer.

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## NOTES ON MOISTURE CONDENSATION

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Moisture condensation damages the DVR unit. Read the following information carefully.

**Moisture condensation occurs during the following cases:**

- When you bring the DVR unit directly from a cold place to a warm place.
- When you use the DVR unit in a room where you just turned on the heater, or a place where the cold wind from the air conditioner directly hits the unit.
- In the summer, when you use the DVR unit in a hot and humid place just after you move the unit from an air conditioned room.
- When you use the DVR unit in a humid place.

**Do not use the DVR unit when moisture condensation may occur.**

If you use the DVR unit in such a situation, it may damage discs and internal parts. Remove any CD discs, connect the power cord of the DVR unit to the wall outlet, turn on the DVR unit, and leave it for two to three hours. After two to three hours, the DVR unit will have warmed up and evaporated any moisture. Keep the DVR unit connected to the wall and moisture will seldom occur.

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## WARNING

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TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

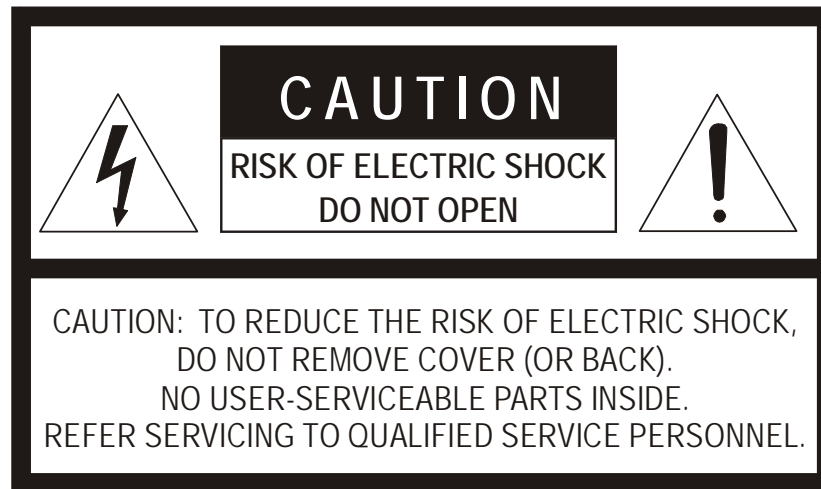
DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE.  
DO NOT OPEN THE CABINET.

REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

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## CAUTION

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## EXPLANATION OF GRAPHICAL SYMBOLS

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The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.



The circle with inward pointing arrows is intended to alert the user to the presence of sensitive electronic components susceptible to Electro Static Discharge. The utmost care should be exercised in ensuring proper grounding before handling these components.





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# SECTION 1

## INTRODUCTION

### 1.1 PRODUCT DESCRIPTION

The Honeywell Fusion DVR is simply a server that performs as a High Definition Digital Recorder. By utilizing the many features of a computer, including processing power, storage capacity, graphics compression, and security features, the DVR unit is more powerful than the analog recorders of the past.

The Honeywell Fusion DVR server software comes pre-configured for fast and seamless integration within your existing IT infrastructure. Designed around Microsoft® Windows® XP, the server software offers unparalleled stability, security, and ease of use. Accordingly, your security investment has never been easier to maintain. Multiple users may simultaneously connect through any network connection for instantaneous live viewing, digital search, and off site video storage. Users can also connect remotely through DSL, Cable Modems, ISDN, or 56K dial-up. This powerful software enables users to establish recording schedules, create motion detection zones, use PTZ controls, and configure alarm inputs and outputs for each of the system's cameras. With the latest advancements in the DVR Server Software, searching and indexing your video archive has never been easier. Video can now be found, viewed, and exported in a number of file formats with just a few clicks.

The Honeywell Fusion DVR is a high performance security product ready to meet today's security demands.

## 1.2 FEATURES

Honeywell's Fusion DVRs include the following features:

- Optimized and Designed for Microsoft® Windows XP® Embedded
- Supports up to 16 Digital Control Outputs on Alarm Activation
- Supports up to 16 Alarm Inputs for Alarm Control
- Remote System Operation & Configuration
- Supports Multiple Simultaneous Remote Connections
- Up to 16 Audio Inputs
- Pan / Tilt / Zoom Controls
- Simultaneous Video Search, Playback, and Backup
- Video Indexes for Easy Searching
- Multiple Levels of Security Access
- Up to 32 Looping Outputs
- Optional POS and ATM Support
- Spot Monitor Output
- Up to 64 Camera Inputs
- High Performance, Durable, Rack mount Case
- Output the Video to a NTSC/PAL Display
- Virtually Unlimited Storage Potential
- Supports Digital Signatures
- Continuous Motion Detection, Alarm, Pre-Alarm, and Scheduled Recording Modes
- Hardware Watchdog
- 720x480 / 720x240 / 360x240 NTSC Recording Resolution  
720x576 / 720x288 / 360x288 PAL Recording Resolution

## SECTION 2 CONTROLS AND CONNECTIONS

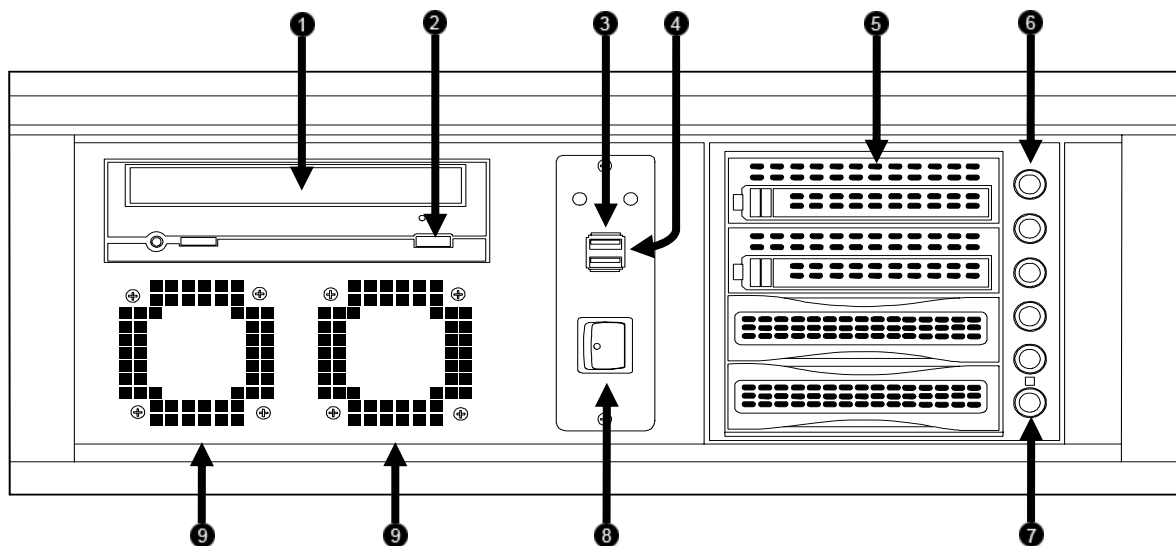
### 2.1 BASIC FEATURES

Honeywell's state-of-the-art High Definition Digital Recorders are housed in a high performance and versatile 4U Aluminum Rack-Mount case allowing easy storage of multiple DVRs for enterprise applications. Every Fusion DVR Unit comes equipped with the latest technology.

- Intel® Processor
- 10/100 Network Interface Card (NIC)
- 512 MB of System Memory
- 128 MB Video Card
- 6x USB 2.0 Ports
- CD-RW Recorder
- Full Duplex High-Fi Sound Functionality
- Standard 250 GB Video Storage Drive

## 2.2 FRONT PANEL CONTROLS AND LEDS

The front panel of the DVR unit contains the devices that will be commonly used for data removal, retrieval, and backup replacement. The most common components and buttons are shown below.



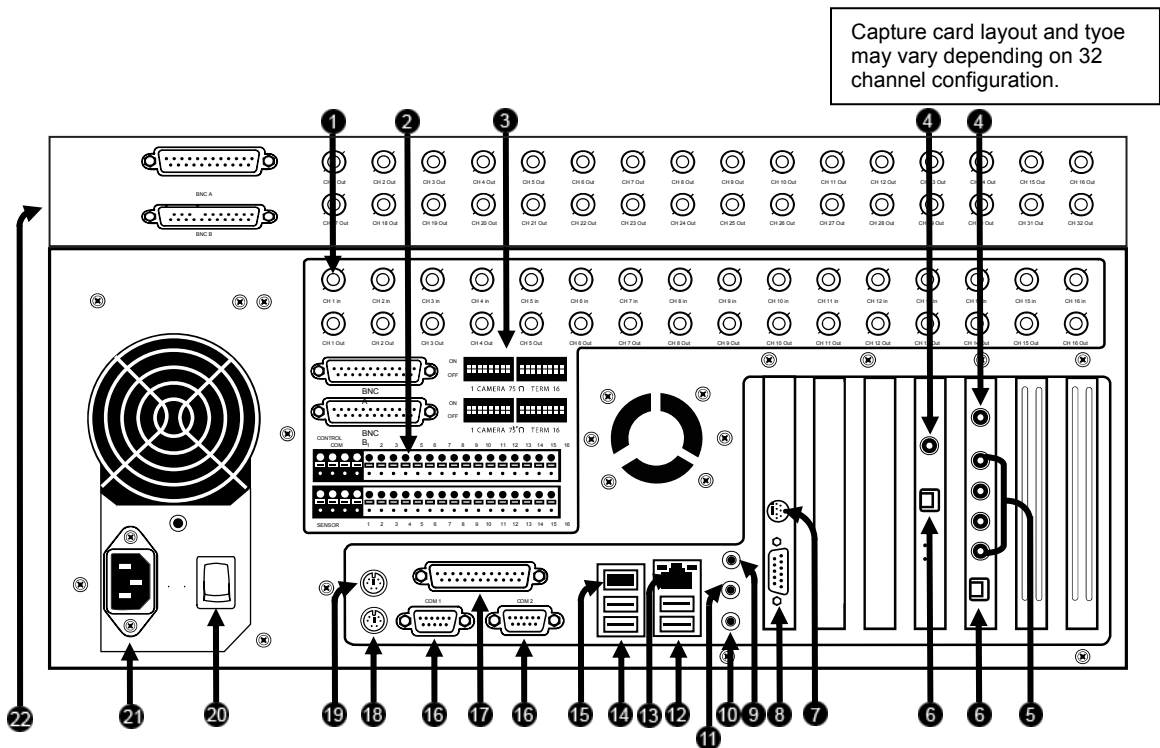
ID	Description
1	CD-RW Drive
2	CD-RW Open Tray Button
3	Hard Drive Activity LED Display
4	USB Ports
5	Hard Drive Trays
6	Hard Drive Power and Reset Controls
7	Fan Activity LED
8	ON/OFF Power Switch
9	Cooling Fan Air Intake



## 2.3 REAR PANEL CONNECTORS

The rear panel of the DVR unit contains virtually all of the connectors you will be using. Below is a diagram that outlines the location and description of each connector:

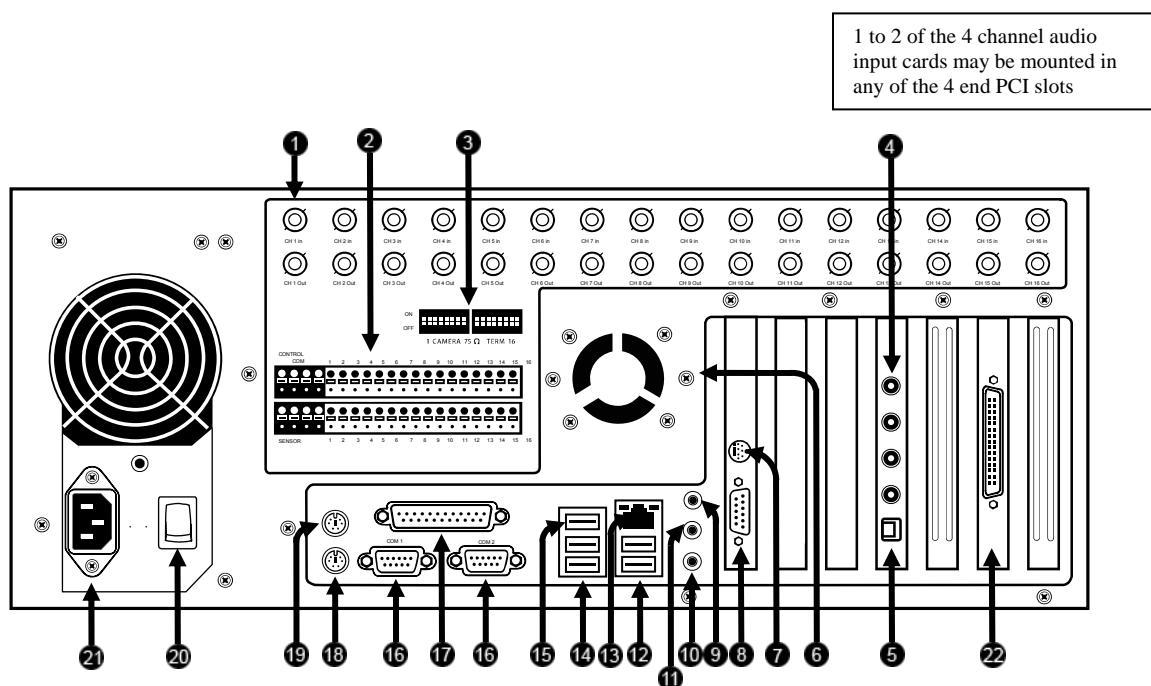
### 32 Channel



ID	Description	ID	Description
1	BNC Connectors for Video Input and Looping Outputs	12	USB Ports
		13	RJ-45 Network Jack
2	Control Alarm Outputs / Sensor Inputs	14	USB Ports
3	Termination Switches	15	FireWire IEEE-1394 Port (Optional)
4	Spot Monitor Output	16	Secondary VGA Port (Unused)
5	Audio Inputs	17	LPT Parallel Printer Port
6	RS-422 Interface	18	PS/2 Keyboard Input
7	S-Video Output	19	PS/2 Mouse Input
8	DB-15 SVGA Monitor Output	20	Rear Power Switch
9	Audio Microphone In	21	AC Power Connector
10	Audio Speaker Out	22	Optional 32 channel looping output upgrade
11	Audio Line In		

Note: Connections displayed may not be available or functional on specific models.

## 8/16 Channel

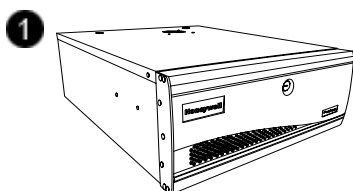


ID	Description	ID	Description
<b>1</b>	BNC Connectors for Video Input and Looping Outputs	<b>12</b>	USB Ports
		<b>13</b>	RJ-45 Network Jack
<b>2</b>	Control Alarm Outputs / Sensor Inputs	<b>14</b>	USB Ports
<b>3</b>	Termination Switches	<b>15</b>	FireWire IEEE-1394 Port (Optional)
<b>4</b>	Audio Inputs	<b>16</b>	Secondary VGA Port (Unused)
<b>5</b>	RS-422 Interface	<b>17</b>	LPT Parallel Printer Port
<b>6</b>	Exhaust Fan	<b>18</b>	PS/2 Keyboard Input
<b>7</b>	S-Video Output	<b>19</b>	PS/2 Mouse Input
<b>8</b>	DB-15 SVGA Monitor Output	<b>20</b>	Rear Power Switch
<b>9</b>	Audio Microphone In	<b>21</b>	AC Power Connector
<b>10</b>	Audio Speaker Out	<b>22</b>	16 Channel Audio Port (for use with the 16CH 480PPS model)
<b>11</b>	Audio Line In		

## SECTION 3 GETTING STARTED

### 3.1 IDENTIFYING INCLUDED COMPONENTS

Honeywell's Fusion DVRs come with a mouse, keyboard and selected software and cables. Identify the following components to make sure everything has been properly included with your new DVR unit. If any of the following items are missing, contact your dealer to arrange for a replacement.



DVR Unit



Mouse



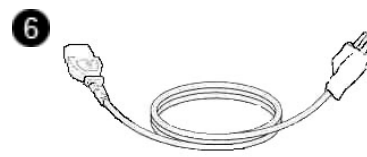
Keyboard



DVR Repair and Software Disc



PTZ Adapter



Power Cord



DVR Manual



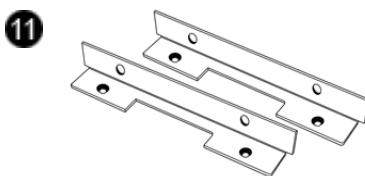
Mouse Pad



DVR Key



RCA Video Adapter (1x in 16 channel, 2x in 32 channel)



Rack mount Attachments with 4 tapered mounting Screws



16 Channel Audio Octopus Cable\*



Audio Splitter\*\*

\* Octopus cable included with the 16Ch. 480PPS models, standard

\*\* Audio Splitter included with 8CH 120PPS and 16CH 120PPS models only

## 3.2 KEYBOARD SETUP

To attach the keyboard to the DVR unit, plug the end of the Keyboard cable into the keyboard PS/2 Port located on the back of the machine. The keyboard PS/2 Port can be identified by the purple color.



## 3.3 MOUSE SETUP

To attach the mouse to the DVR unit, plug the end of the mouse cable into the mouse PS/2 Port located on the back of the machine. The mouse PS/2 Port can be identified by the green color.

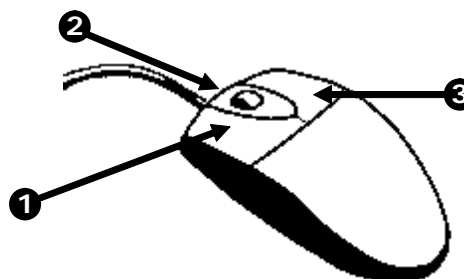
The mouse uses a cursor called a pointer. Pointers come in many different shapes but are most commonly shaped like an arrow.

The mouse has two buttons: a left button and a right button. Quickly pressing and releasing one of these buttons is called clicking. Sometimes it will be necessary to double-click – or click the same button twice quickly.

In this manual, click means to position the mouse point on an icon and to single click the left button. When a right click is required, this is stated clearly. Double-click also refers to the left button.

The ratchet wheel in between the two buttons is added to provide easier scrolling capability. By simply moving the wheel with your index finger, you can quickly move through multiple pages, lines, or windows. The wheel may also function as a third button allowing you to quickly click or double-click an icon or a selected item.

1	Left Button
2	Scroll Button/Third Button
3	Right Button



### 3.4 MONITOR SETUP

Attach the Monitor to the Rear of the DVR unit using the VGA cable supplied by the Monitor Manufacturer. Refer to the monitor manual for detailed information on how to setup and use it.

**NOTE:** The monitor you use must be capable of having a screen resolution of 1024 x 768 and display colors of at least 32 Bit.

### 3.5 POWER SETUP

Attach the AC power cable to the rear of the DVR Unit.



**WARNING:**

To reduce the risk of electrical shock or damage to the equipment:

Do not disable the power grounding plug.

The grounding plug is an important safety feature.

If the electrical plug you are using does not have a ground plug receptacle contact a licensed electrician to have it replaced with a grounded electrical outlet.

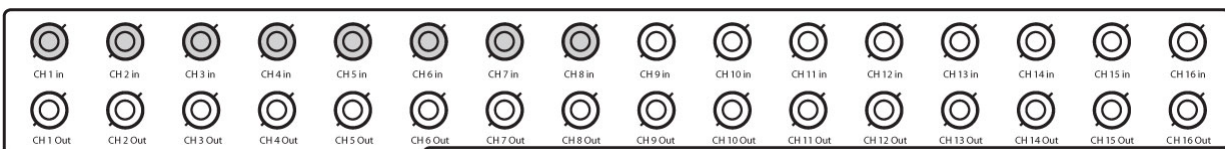
Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

Disconnect the power from the computer by unplugging the power cord either from the electrical outlet or the computer.

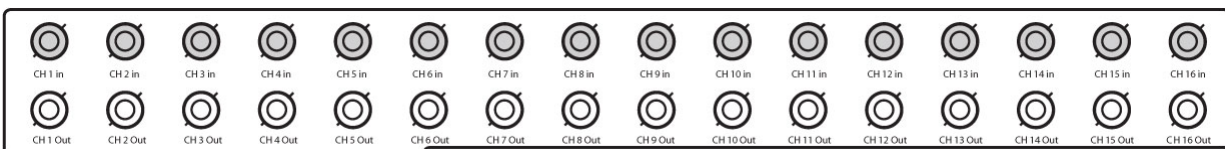
### 3.6 CONNECTING A VIDEO SOURCE TO THE DVR

There are different types of Video Sources that can be plugged into your DVR unit including DVD players, VHS players, and CCTV Cameras. The back of the DVR unit contains up to 32 video inputs depending on the DVR model. The connectors are standard BNC connectors.

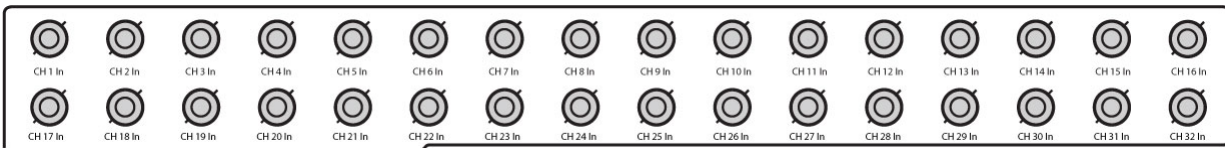
#### 8-Channel DVR



#### 16 Channel DVR



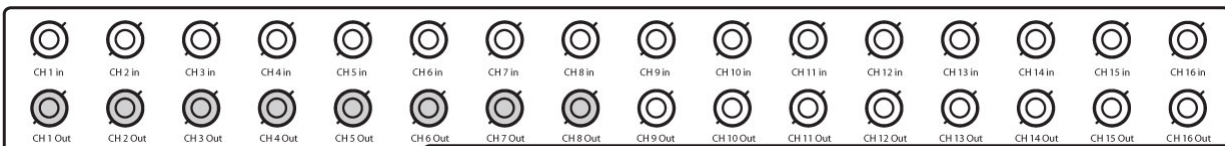
#### 32 Channel DVR



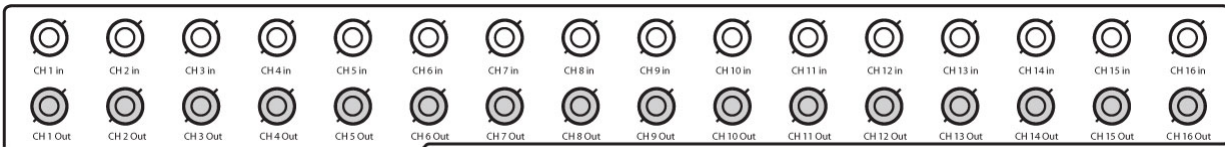
### 3.7 LOOPING OUTPUTS

The back of the DVR unit contains up to 32 video outputs, which may be connected to video monitors or VCR's, depending on the DVR model. The connectors are standard BNC connectors and may require termination depending on the destination of the output. Make sure there is a video source connected to the corresponding input and then connect a cable to the Channel Out.

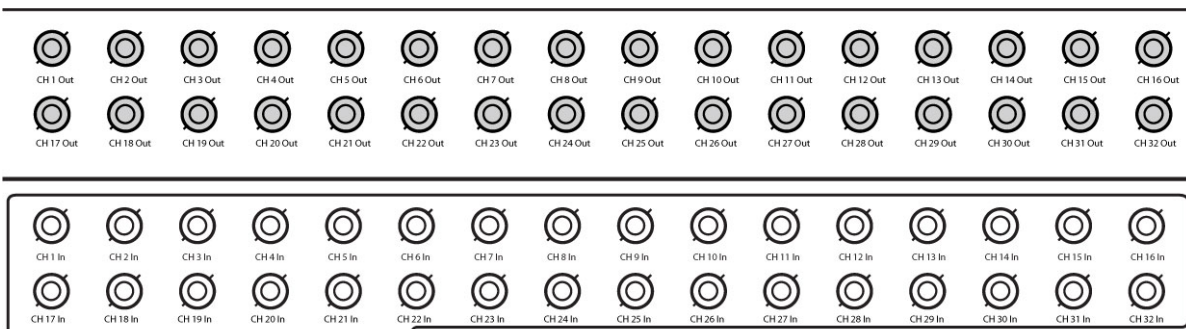
#### 8 Channel DVR



#### 16 Channel DVR



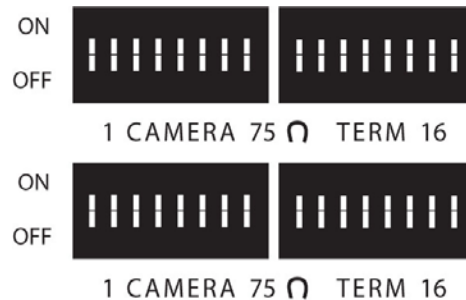
#### 32 Channel DVR



### 3.8 LOOPING OUTPUT TERMINATION

When terminating the outputs becomes necessary, the DVR unit has built-in termination that allows you to select individual outputs to be terminated. Generally it is not necessary to terminate the output when using it. It is dependant on if the device to which you are connecting it, has internal 75 ohm termination. As a rule, if the image appears distorted or virtually un-viewable, it most likely needs to be terminated.

#### Terminating the Looping Outputs



<b>ON</b>	Not connected to a monitor (Normal)
<b>OFF</b>	Connected to a monitor (Looped)

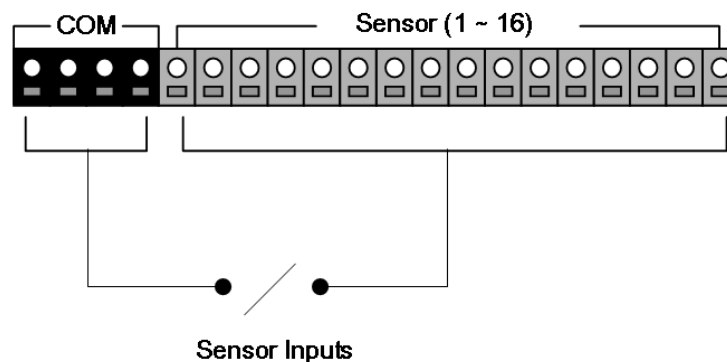
Always leave the dipswitch set to the ON position when the Looping Outputs are not used.

### 3.9 CONNECTING SENSORS TO THE DVR

Each DVR unit may have up to 16 Sensor inputs. These inputs can be used with devices such as Infrared sensors, motion devices, glass break alarms, door and window trips, and many more. The Sensors inputs can be set to Normally Open or Normally Closed inside the software.

There are 4 Commons (-) and 16 inputs (+). There is no power supplied to the ports so an external power supply must be used if power becomes necessary.

#### Sensor Connections

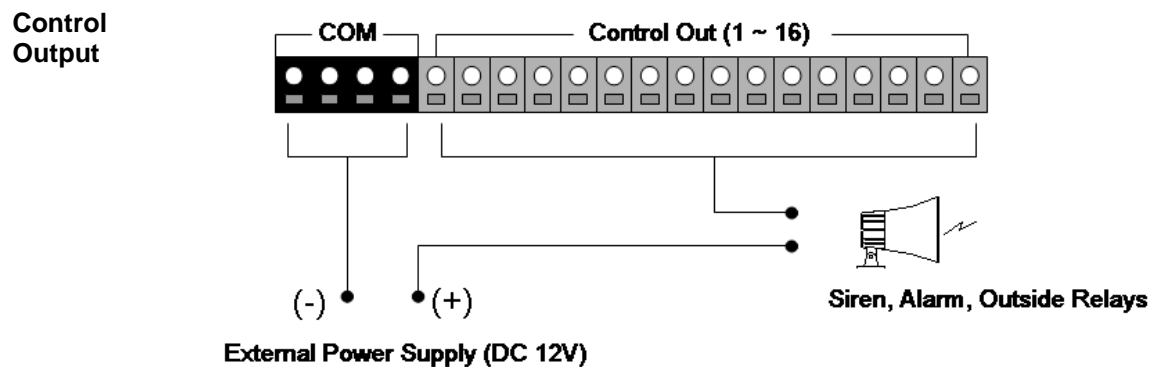


- Normally Open or Normally Closed option is available inside the DVR Software.
- There is no power supplied to the ports. These ports are considered to be “Dry Contacts”. Use an external power supply if necessary.



### 3.10 CONNECTING CONTROL OUTPUTS TO THE DVR

Each DVR unit may have up to 16 Control Outputs. These outputs can be used to trigger devices such as Sirens, Phone Dialers, Lights, and any other relay activated device.

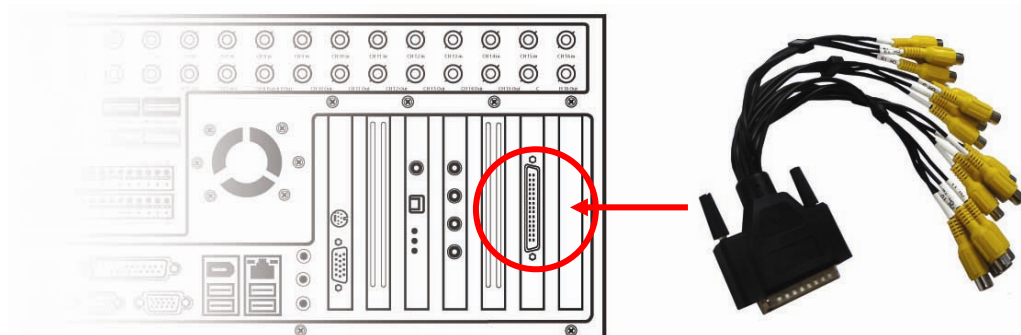


- Use 12V, below 300mA. For controlling lights or other high current devices, use an external relay.
- Maximum voltage is 24V AC @ 1 amp
- Output uses a Form C Relay (NC-C-NC)

### 3.11 CONNECTING A 16 CHANNEL AUDIO OCTOPUS CABLE

The 16 channel audio octopus cable (Standard with the 16Ch 480PPS Fusion DVR) connects to a single serial port in the back of the unit.

#### Rear Connection



- When connecting the 16 Channel Octopus Cable, make sure to properly secure the cable to insure no loss of audio
- Default audio in the 16 Channel 480 PPS Fusion 3 Model (included)

### 3.12 OPTIONAL COMPONENTS

To fully utilize your DVR unit's potential, several optional Fusion components are listed below. Contact your dealer for more information.

DVD ROM Recordable Drive	SCSI Adaptor
USB External Hard Drive	USB Modem
Fiber Network Interface Adapter	4 Port Analog Output Card
Gigabit 10/100/1000 NIC Adapter	16 Port Audio Card
Fusion Remote Video Software	External IDE Storage 1 Terabyte
Internal Raid One	Internal Raid Five
Stand Alone CYA Software	CYA Client Software
Network Accessible Version of CYA	Stand Alone CYA for ATM
CYA - ATM Client Software	Network Accessible ATM Version
Fusion Video Management Software	

## SECTION 4 DVR BASICS

### 4.1 TURNING ON THE DVR

Once the cables have been properly connected, it is time to turn on the power.

1. Turn on the monitor and any external peripherals (ex. Printers, External Storage Devices, etc.) connected to the DVR unit.
2. Turn on the main power switch located on the front of the DVR unit as shown below.

The DVR will run a series of self-tests. After two or three minutes, a series of messages may be displayed as the various hardware and software subsystems are activated. Under normal circumstances you should not be asked to respond to these messages. If you are asked to respond to the messages (adding a Printer, Monitor, etc., for the first time) follow the instructions carefully.

### 4.2 TURNING OFF THE DVR

1. Select the **Exit** button from the main screen. This will prompt you whether you wish to exit the program or not.
2. Select **Yes**. The DVR unit will shut itself off automatically once this is done. The DVR unit may take several minutes to shut down completely



**CAUTION:** Always be sure to follow the proper procedures when turning off the power to the DVR unit. NEVER disconnect the power to the DVR unit while it is still running or in the process of shutting down. Doing so can cause data loss, file corruption, system instability and hardware failure.

### 4.3 NVR/HVR UPGRADE AND REGISTRATION

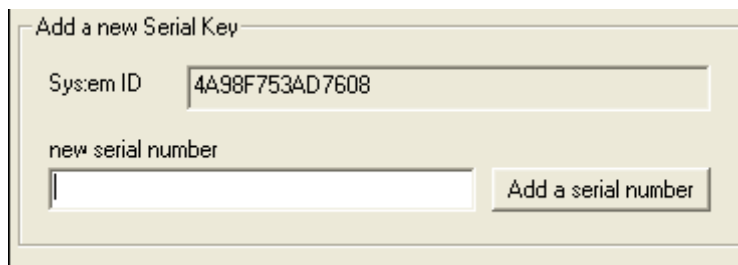
Have the following information available before registering your NVR/HVR upgrade.

**NVR/HVR Software Serial Number:** That product Serial Number is the unique number that Honeywell provided with your purchase software.

**System ID:** The System ID is a number that is generated by the Fusion 3 unit. This is a unique code generated using the MAC address of the computer running the software. The following steps illustrate how to obtain your unique System ID.

1. Enter Setup

2. Click Camera Setup
3. Click the Registration button
4. In the Network Device Authentication, the System ID can be located under the "Add a new Serial Key" section (shown below)



Add a new Serial Key

System ID 4A98F753AD7608

new serial number

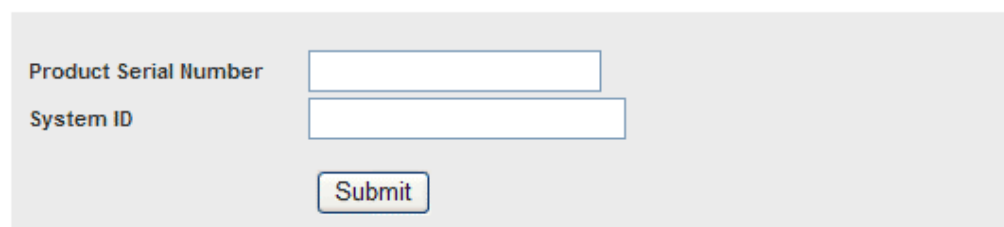
Add a serial number

#### 4.3.1 OBTAINING THE UNLOCK CODE

1. Open an Internet browsing software and go to:  
<http://registration.fusiondvr.support.com/honeywell/Registration/SWregistration.aspx>
2. Enter the Product Serial Number that was provided by Honeywell
3. Enter the System ID that was generated by your unit.
4. Click Submit

##### Software Registration

---



Product Serial Number

System ID

Submit

5. Verify the Information
6. Click Next if the information provided is correct

---

**Software Registration**

Product Name	01 Channel IP Camera Unlock
Product Serial Number	XXXXXXXXXX
System ID	XXXXXXXXXX
DVR Serial Number:	XXXXXXXXXX

Please verify the information and press NEXT to proceed.

[< Back](#)[Next >](#)

7. Once validated, you will be provided with the Unlock Code
8. Print the page and save for later reference

---

**Software Registration**

The following is your unlock code. Keep this number in a safe place as you will need it if you ever reinstall the software.

Unlock Code      XXXXXXXX-XXXXXX

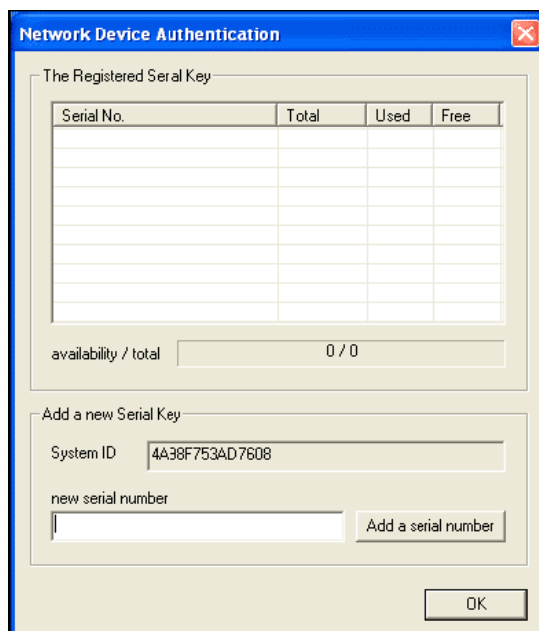
Product	01 Channel IP Camera Unlock
Product SN	XXXXXXXXXX
DVR SN	XXXXXXXXXX

NOTE: This unlock code cannot be transferred to a different computer.

[Print this Page](#)

### 4.3.2 UNLOCKING YOUR NEW NETWORK DEVICE

1. Start your Fusion DVR
2. Enter Setup
3. Enter Camera Setup
4. Click the Registration button
5. Enter the Unlock Code generated by the Honeywell Registration Site into the "new serial number" field
6. Click Add a serial number
7. Once the new serial number has been added to the list, click OK



The Network Device Authentication dialog box is titled "Network Device Authentication" and features a close button (X) in the top right corner. It is divided into two main sections. The top section, "The Registered Serial Key", contains a table with four columns: "Serial No.", "Total", "Used", and "Free". The table has 10 rows, with the first row being empty and the subsequent 9 rows containing placeholder text. Below the table, there is a label "availability / total" followed by a text box displaying "0 / 0". The bottom section, "Add a new Serial Key", contains a "System ID" label with a text box containing "4A38F753AD7608". Below this is a "new serial number" label with a text box and an "Add a serial number" button. At the bottom right of the dialog is an "OK" button.

Serial No.	Total	Used	Free

availability / total 0 / 0

System ID 4A38F753AD7608

new serial number

Add a serial number

OK

## 4.4 DISPLAY SCREEN

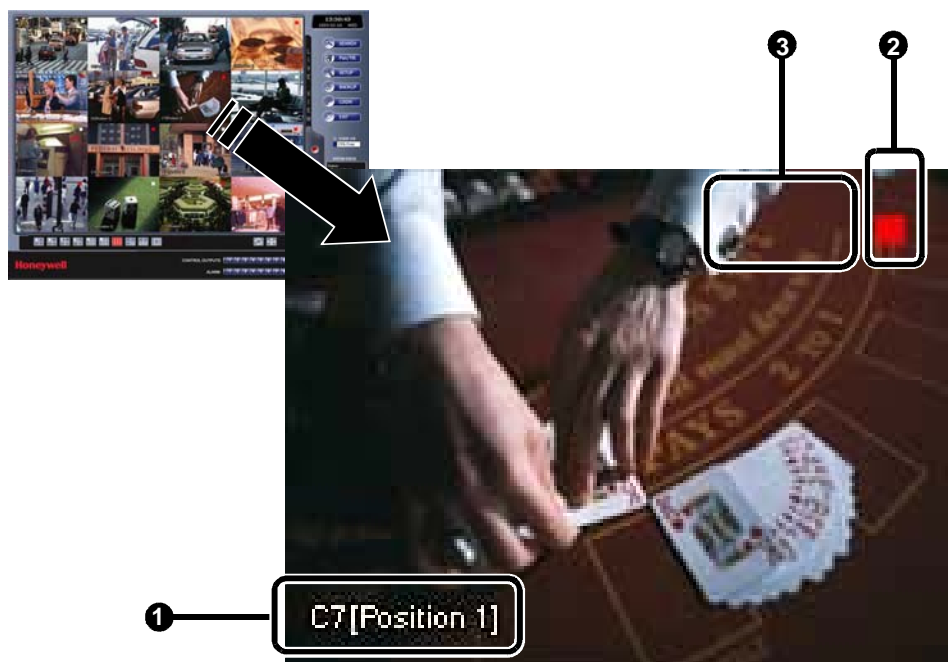
Each time the DVR is restarted, the program defaults to the Display screen. The following diagram outlines the buttons and features used on the Display screen. Become familiar with these options as this is the screen that will be displayed the majority of the time.



1	<b>Camera Display Buttons</b>	Controls camera display options including number of cameras displayed on screen, full screen mode, and looping camera displays.
2	<b>Date/Time</b>	Displays current date and time.
3	<b>Search</b>	Opens the Search Screen.
4	<b>PTZ</b>	Opens the On Screen Pan/Tilt/Zoom controller.
5	<b>Setup</b>	Opens Setup Menu.
6	<b>Backup</b>	Opens the Backup Menu.
7	<b>Login</b>	Opens the Login Menu.
8	<b>Exit</b>	Opens the Exit Menu.
9	<b>System Status</b>	Displays all users currently connected to the DVR.
10	<b>Control Output</b>	Displays status of and activates Control Outputs.
11	<b>Alarm</b>	Displays status of Sensor Inputs.

## 4.5 CAMERA VIEW




The Camera status for each camera is displayed next to the Camera number (or name) on the Video Display Area.



1	<b>Camera Number and Name</b>	Displays the camera number and the custom name given to the camera.
2	<b>Recording Status</b>	Displays the current recording status of the camera using symbols.
3	<b>Special Recording</b>	Displays text relating to the type of recording that is occurring.



## 4.6 RECORDING STATUS INDICATOR

	<b>Recording</b>	A red light is displayed when the camera is currently being recorded to the DVR unit.
	<b>Motion Detection</b>	A green light is displayed when a camera (set up for motion detection) detects motion
	<b>Display</b>	A square is displayed when the camera is currently not being recorded to the DVR unit.













### Special Recording

There are several different types of DVR “Special Recording” situations. When this happens, text is displayed on the camera indicating what kind it is.

<b>Sensor</b>	Displays when a sensor, associated with a given camera, is activated.
<b>Instant</b>	Instant Recording is a manual activation of the recording for the selected camera. Regardless of the recording method, Instant Recording will start the camera recording and also flag the video for future searches using the Index Search feature. INSTANT is displayed when a user activates the instant recording option. Double Right-Click to activate and deactivate the Instant Recording option.

## 4.7 SCREEN DIVISION MENU

The Screen Division options allow you to change camera views with 1, 4, 9, or 16 camera view configurations as well as full screen and rotating options.

	<b>1<sup>st</sup> Four Cameras</b>	Displays cameras 1-4 in the Video Display Area.
	<b>2<sup>nd</sup> Four Cameras</b>	Displays cameras 5-8 in the Video Display Area.
	<b>3<sup>rd</sup> Four Cameras</b>	Displays cameras 9-12 in the Video Display Area.
	<b>4<sup>th</sup> Four Cameras</b>	Displays cameras 13-16 in the Video Display Area.
	<b>1<sup>st</sup> Nine Cameras</b>	Displays cameras 1-9 in the Video Display Area.
	<b>2<sup>nd</sup> Nine Cameras</b>	Displays cameras 10-18 in the Video Display Area.
	<b>Camera Multi-View 1</b>	Displays a grouping of the first 15 cameras in the Video Display Area.
	<b>Camera Multi-View 2</b>	Displays the first 16 cameras in the Video Display Area.
	<b>Camera Multi-View 3</b>	Displays a grouping of the first 7 cameras in the Video Display Area.
	<b>Camera Multi-View 4</b>	Displays a grouping of the first 10 cameras in the Video Display Area.
	<b>Full Screen</b>	Displays the current camera display configuration full screen.
	<b>Auto-Sequence</b>	Sequences through the Screen Divisions sets of 4, 9, or 16 cameras.

NOTES:



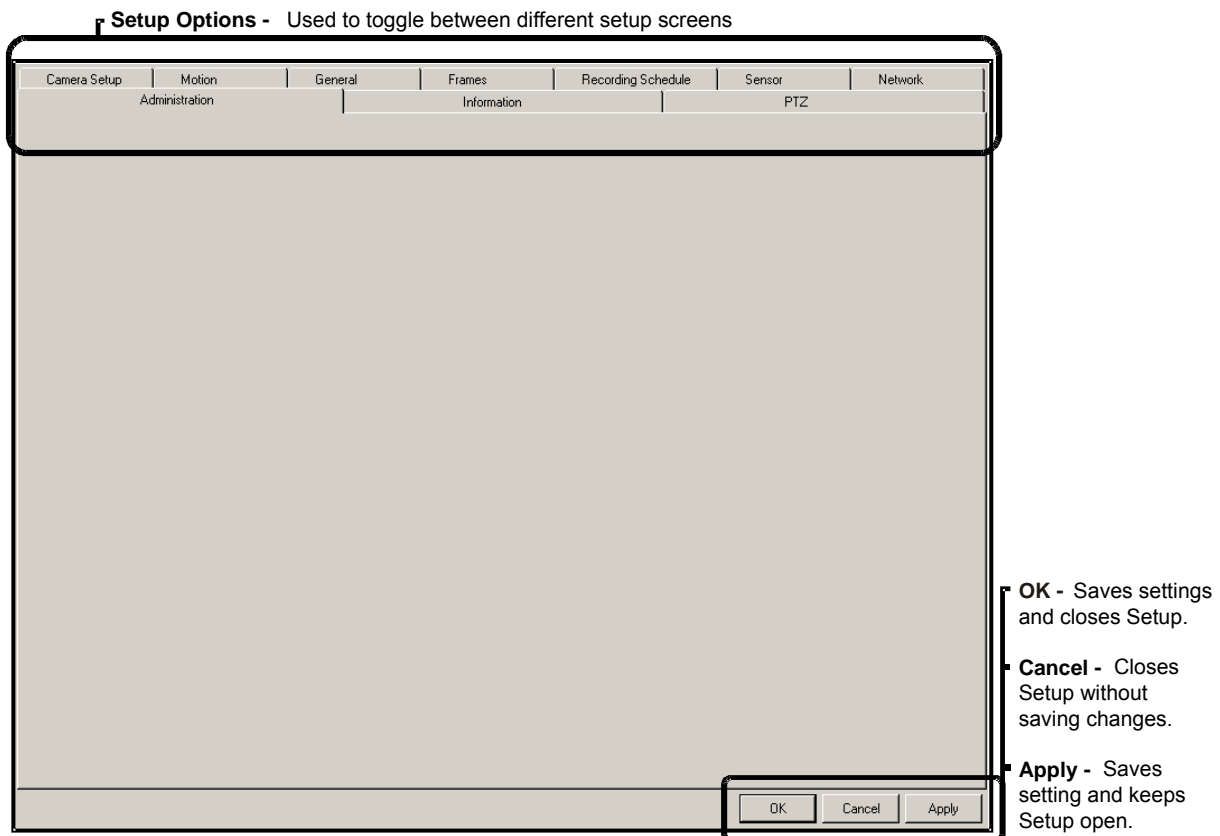
## SECTION 5 SETUP OPTIONS

### 5.1 SETUP OVERVIEW

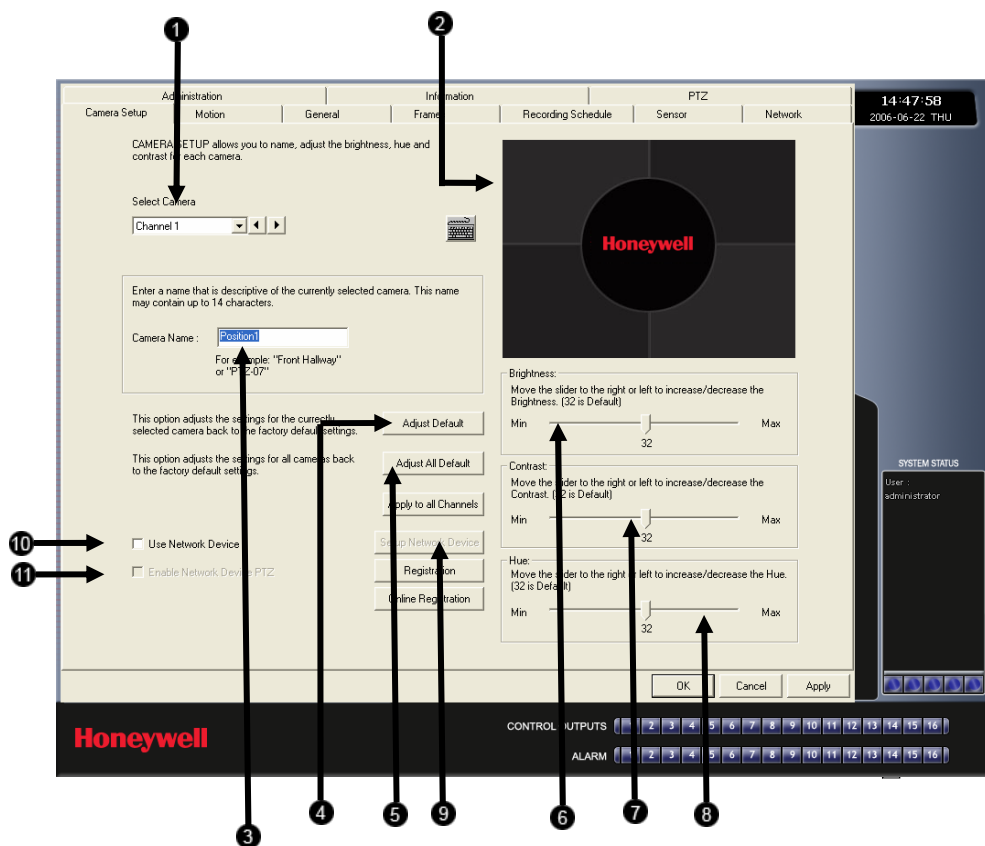
The Setup options allow optimization of your DVR unit by adjusting things like camera names, recording schedules and more. It is extremely important to setup your DVR correctly for several reasons:

- **Recording Schedules** – Increase the amount of pertinent recorded video that is saved on the DVR by optimizing the recording schedule. Optimize the type of recording done by adding motion detection to this as well, again increasing the amount of useful video.
- **DVR Access** – By setting up the access passwords, you have better control of the types of access any individual may have. This ensures the security and integrity of the DVR.
- **Camera Naming** – By naming each camera the location can be easily identified and any other pertinent information that may be helpful simply by viewing it on the Video Display Area.
- **Adjusting Camera Color** – Optimize the clarity and detail that is recorded by adjusting each camera's color settings.

#### 5.1.1 SETUP SCREEN OVERVIEW



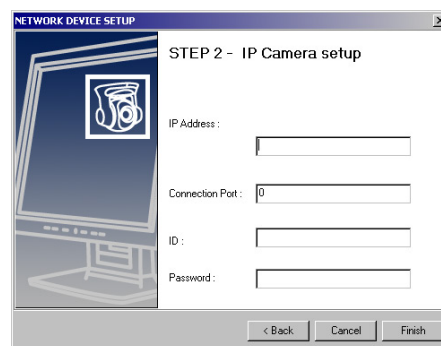
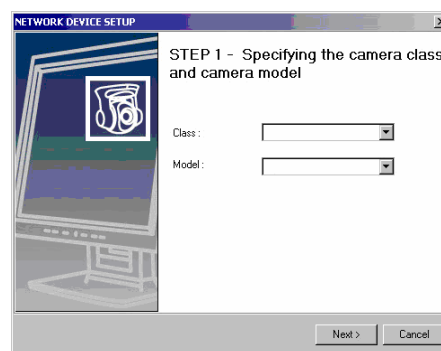
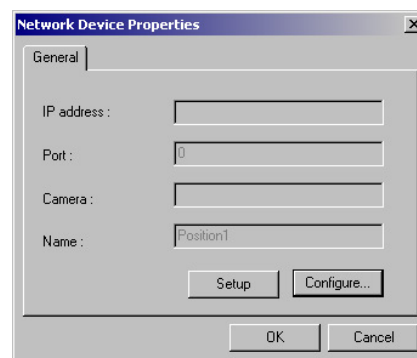
## 5.2 CAMERA SETUP



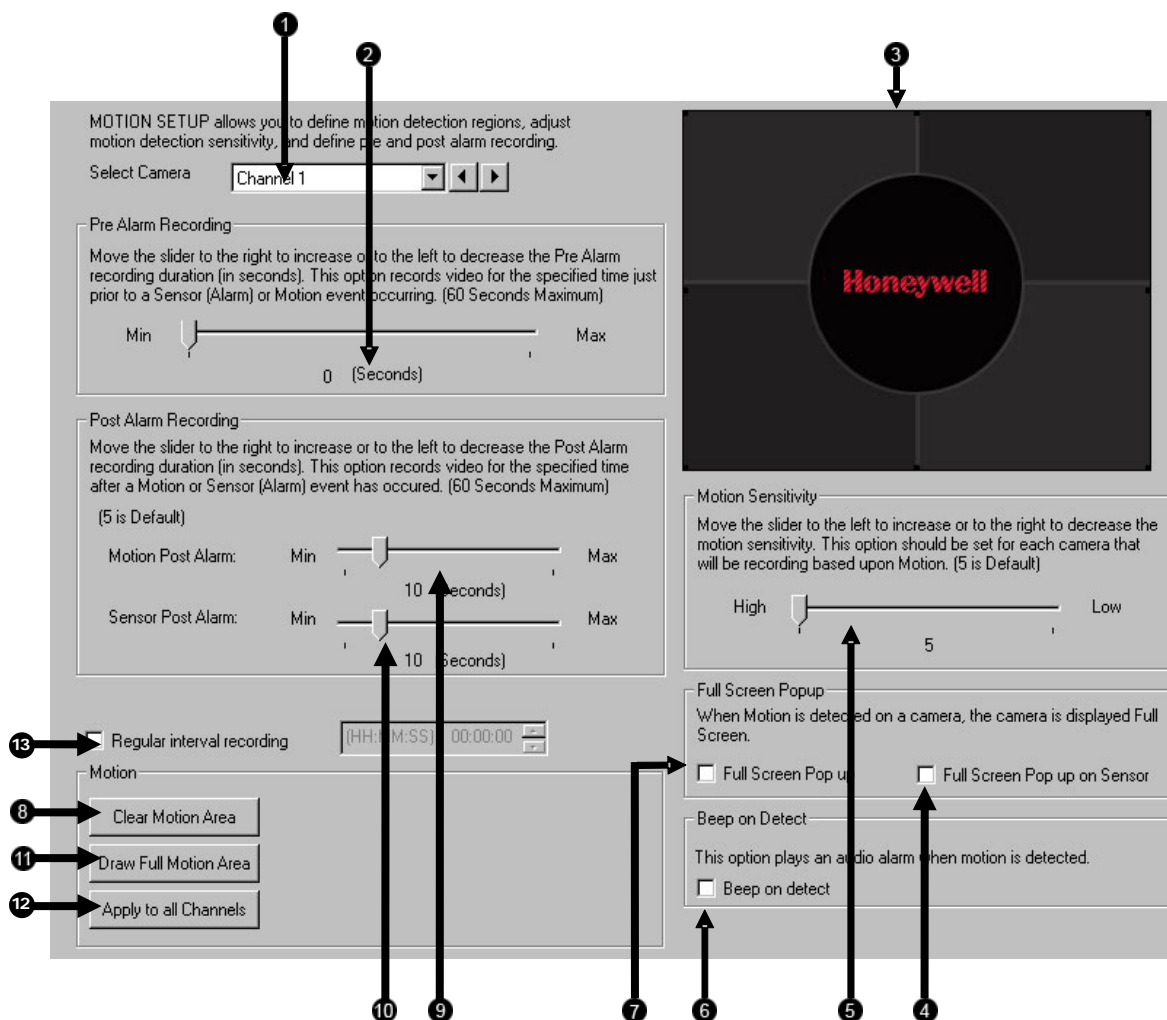
1	<b>Select Camera</b>	Selects the current camera to be edited.
2	<b>Video Display</b>	Displays the live video of the current camera selected.
3	<b>Camera Name</b>	Ability to specify a name for each camera. (up to 14 characters for every camera)
4	<b>Adjust Default</b>	Adjusts the color settings for the selected camera back to the system default.
5	<b>Adjust All Default</b>	Adjusts the color settings for ALL cameras to the system default.
6	<b>Brightness</b>	Adjusts the brightness of the selected camera.
7	<b>Contrast</b>	Adjusts the contrast of the selected camera.
8	<b>Hue</b>	Adjusts the hue of the selected camera.
9	<b>Setup Network Device</b>	Sets up Network Device from a specified address.
10	<b>Use Network Device</b>	Specifies whether a Network Device will be used for this channel.
11	<b>Enable Network Device PTZ</b>	Enables the use of a Network Device PTZ.

## 5.2.1 CONNECTING A NETWORK DEVICE

1. Select the camera channel you plan to add a Network Device to.
2. Check the Use Network Device Box
3. If your Network Device supports PTZ check the Enable Network Device PTZ Box.
4. Click Setup Network Device and the Network Device Properties window will appear.
5. Click Setup to begin adding a Network Device.
6. Select the Manufacturer and Model of camera you are adding then click next.
7. Enter the IP Address, Port, ID, and Password of the Network Device and click Finish.
8. Click OK when you are returned to the main Network Device Properties window and click OK to exit the main setup window.
9. Your Network Device has now been added.



## 5.3 MOTION



1	<b>Select Camera</b>	Selects the current camera to be edited.
2	<b>Pre-Alarm</b>	Allows record of a section of video just prior to motion or sensor activation.
3	<b>Motion Region Setup</b>	The box displays the video for the selected cameras and allows you to create up to 5 motion regions.
4	<b>Full Screen Pop-Up on Sensor</b>	When a sensor is activated, the camera is displayed full screen.
5	<b>Sensitivity</b>	Adjusts the sensitivity within the designated motion areas.
6	<b>Beep on Detect</b>	When motion is detected, an internal speaker on the DVR sounds an alarm.




7	<b>Full Screen Pop-Up</b>	When motion is detected, the camera is displayed full screen.
8	<b>Clear Motion Area</b>	Clears all motion areas for the selected camera.
9	<b>Post Alarm (MOTION)</b>	Record video after motion has stopped for a specified period of time. This option will only work for camera set to record using motion detection.
10	<b>Post Alarm (SENSOR)</b>	Record video after a sensor event has ceased for a specific period of time. This option will only work for cameras set to record from a sensor.
11	<b>Draw Full Motion Area</b>	This option allows you to draw a full motion area over the whole camera screen that is selected.
12	<b>Apply to all channels</b>	Applies the current motion settings to all camera channels.
13	<b>Regular Interval Recording</b>	Allows you to specify a regular interval, in which the specified channel will record.

### 5.3.1 CREATING A MOTION AREA

10. Place the mouse pointer at the upper left hand corner of the designated area, press and hold down the left mouse button, drag the mouse. Let go of the button when the Motion Area is of the desired size.
11. Continue creating as many Motion Areas as desired (up to 5). Resize and move motion areas by dragging the sides and corners of the Motion Area window.



### 5.3.2 REMOVING A MOTION AREA

1. To remove the motion areas, press .

### 5.3.3 REGULAR INTERVAL RECORDING

**Motion**

To enable regular Interval Recording on Motion follow these steps:

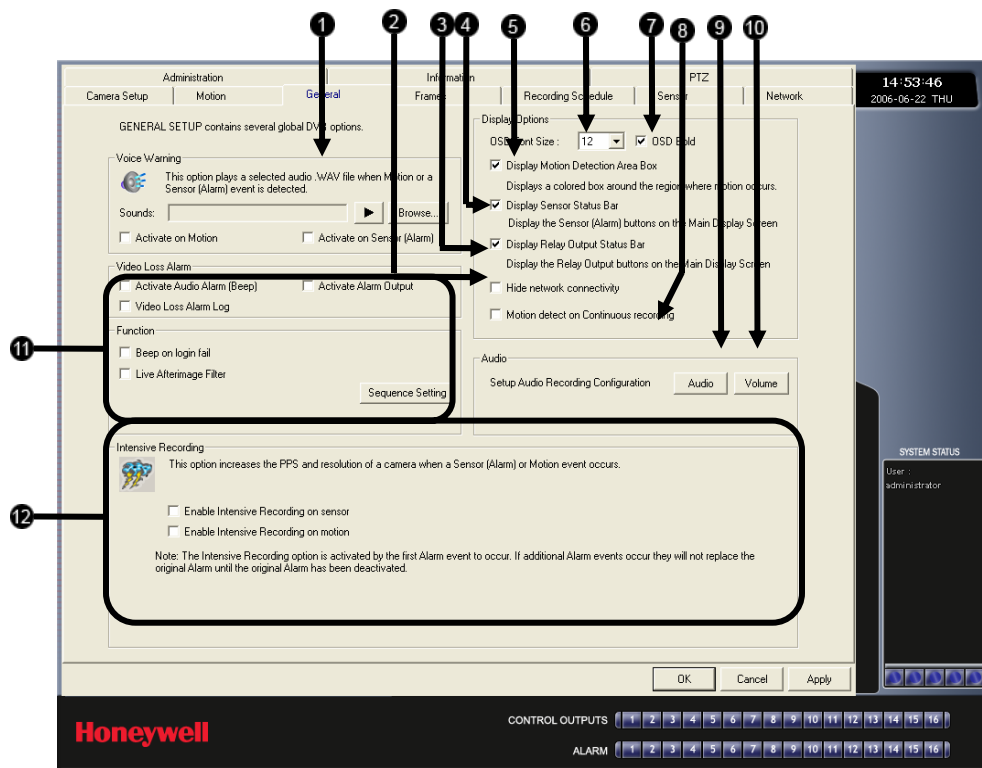
1. Setup a camera to record on motion.
2. Place a check in the Regular Interval Recording box.
3. Specify how often to take an image when no motion is occurring. You can go as little as 1 image per second.

**Sensor**

To enable regular Interval Recording on a Sensor Event follow these steps:

1. Setup a camera to record on motion.
2. Delete the motion grid on the selected camera. This will cause the camera to never be triggered by a Motion event.
3. Associate a Sensor to the selected camera, and set the schedule. Sensor Recording supersedes all other types of recording. When a sensor event occurs, the camera will begin recording.
4. Place a check in the Regular Interval Recording box.
5. Specify how often to take an image when no motion is occurring. You can go as little as 1 image per second.

## 5.4 GENERAL SETUP

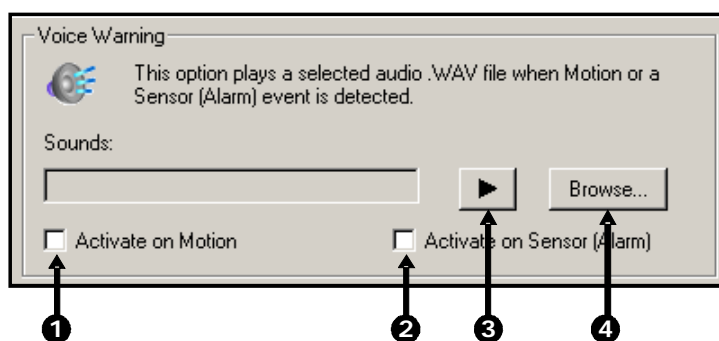


1	<b>Voice Warning</b>	Provides an audible warning (.wav sound clip) when motion or sensors are activated.
2	<b>Hide Network Connectivity</b>	Enables/Disables display of the Network Connectivity on the Main Display Screen.
3	<b>Display Relay Output Status Bar</b>	Enables/Disables display of the Relay Output Status Bar on the Main Display Screen.
4	<b>Display Sensor Status Bar</b>	Enables/Disables display of the Alarm Status Bar on the Main Display Screen
5	<b>Display Motion Detection Area Box</b>	Displays the motion area box on the Main Screen whenever motion occurs.
6	<b>OSD Font Size</b>	Allows adjustment of the On-Screen Display font size for cameras.
7	<b>OSD Bold</b>	Makes OSD Font bold.
8	<b>Motion detect on Continuous recording</b>	Allows for motion detection on continuous recording.
9	<b>Audio</b>	Opens the Audio enable/disable options.

<b>10</b>	<b>Volume</b>	Opens the Volume playback control panel.
<b>11</b>	<b>Video Loss Alarm</b>	These options allow video loss to be designated as an alarm.
<b>12</b>	<b>Intensive Recording</b>	Allows you to enable Intensive Recording on sensor or motion.

### 5.4.1 VOICE WARNING

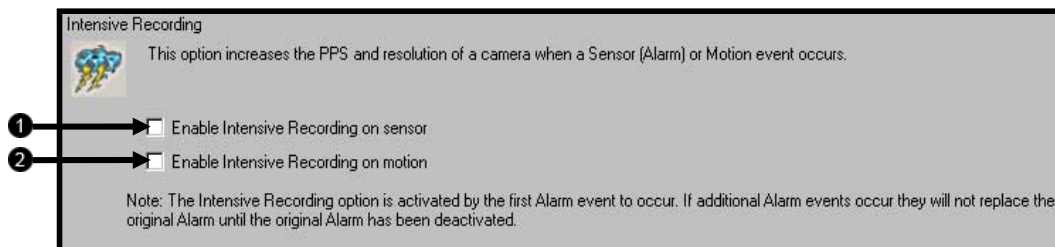
The DVR unit can be set to play a sound file when either a Motion or Sensor event occurs. This file can be a custom created sound file that is unique to your application. The selected WAV file is played through speakers attached to the DVR unit.



<b>1</b>	<b>Activate on Motion</b>	Enables the voice warning on motion events.
<b>2</b>	<b>Sensor Event</b>	Enables the voice warning on sensor events.
<b>3</b>	<b>Play Selected WAV</b>	Plays the selected WAV file.
<b>4</b>	<b>Browse</b>	Used to select the location of the WAV file to use.

## 5.4.2 INTENSIVE RECORDING OVERVIEW

The Intensive Recording Option allows increasing of the Pictures Per Second and the resolution of any camera recording using sensor activation.



1	<b>Enable Intensive Recording Sensor</b>	Enables intensive recording on sensor events.
2	<b>Enable Intensive Recording Motion</b>	Enables intensive recording on motion events.

## 5.4.3 HOW TO USE INTENSIVE RECORDING

The Intensive Recording option is set up as an 'All or Nothing'. This means that once enabled (associated with sensors), all cameras that are associated with sensors will activate the Intensive Recording.

### Activating Intensive Recording

To activate the Intensive Recording option, follow these steps.

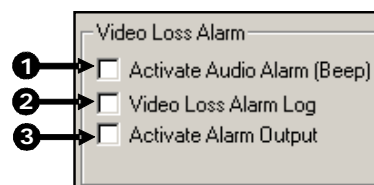
1. Inside **Setup**, select the desired camera to use and then enable the appropriate sensor associated to it.
2. Open the **Intensive Recording** Options. Enable the **Intensive-On-Sensor** option and then select the desired **Pictures Per Second** for both the Intensive and Non-Intensive Channels. Resolution and holding duration may also be adjusted for the Intensive Channel.
3. Close the **Intensive Recording** window by selecting the **Apply** button.
4. Open the **Sensors and Outputs** window and enable the sensor that was associated with the Intensive Recording by placing a check in the box next to it
5. Press the **Apply** button and exit out of setup.

#### 5.4.4 VIDEO LOSS ALARM

The DVR supports a Video Loss Alarm function which allows an Alarm Event to occur when a camera loses its signal. The lost signal can be due to Power failure to the camera, the camera cable being cut or unplugged, or the camera being damaged in some way.

In order to use Video Signal Loss detection, cameras must either be ENABLED or DISABLED. This is because the DVR needs to know which cameras it should expect to receive signals from. To ENABLE camera(s), open **Frame Setup**, and set the Frames Per Second to anything above zero. By designating zero frames per second the camera will not be used by the DVR.

1	<b>Activate Audio Alarm (BEEP)</b>	When video loss occurs, an internal speaker on the DVR will sound an alarm.
2	<b>Video Loss Alarm Log</b>	When video loss occurs, the event is recorded in the DVR log.
3	<b>Activate Alarm Output</b>	Activates the last Relay Output on the DVR when camera loses signal. (This is #16 for a 16/32 ch DVR and #8 for an 8ch DVR)



### 5.4.5 AUDIO RECORDING

The DVR is capable of recording up to 16 channels of audio depending on the model purchased.

**Audio Features:**

- 8000Hz playback in Live Mode
- Audio input level should be 1Vp-p
- Up to 48000Hz playback in search mode
- Mono Sampling
- Line-In type (Requires amplification)

**Data Size (per channel):**

- 1 Second: 1,625 bytes
- 1 Minute: 97,500 bytes
- 10 Minutes: 975,000 bytes
- 1 Hour: 5,850,000 bytes
- 1 Day: 140,400,000 bytes  
(approx. 140MB)

## 5.5 FRAME SETUP

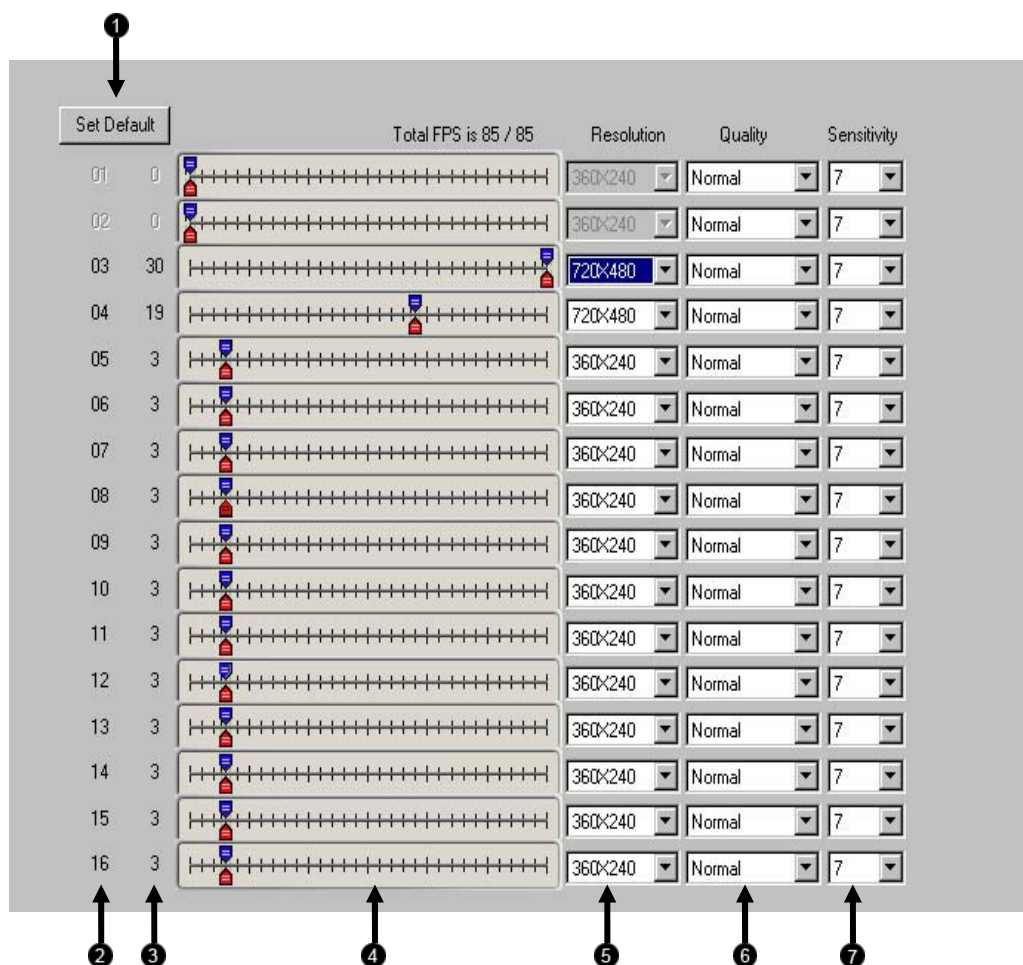
The Frame Setup menu gives the user the option to adjust both the resolution and the number of images per second each camera will record. When setting up the FPS sliders, the BLUE slider represents the frames in which the DVR will capture the incoming video at while the RED slider represents the frame rate that will be recorded.

This option is beneficial when higher frame rates are desired remotely. The Server will only send out frames remotely that have been first encoded. For Ex. If the Blue 'ENCODING' option is set to 25 FPS and the Red 'RECORDING' option is set to 7 PPS then the DVR Server will record 7 PPS and users viewing live video remotely will receive 25 PPS on that specific camera. Please note that there are two different Frame Setup windows for low end and high end models, the picture below illustrates the high-end Frame Setup.

**NOTE:** The Software will not allow the maximum available Frames to be exceeded.

**NOTE:** The RED FPS record slider cannot exceed the BLUE FPS capture slider.

### 5.5.1 FRAME SETUP (HIGH-END)





1	<b>Set Default</b>	Selecting this option resets all camera frames and resolutions to the default settings.
2	<b>Camera Number</b>	The cameras are given different numbers to distinguish them when viewing the frame status. Adjust the recorded frames per second by sliding the bar to the left and right.
3	<b>Number of Frames</b>	Displays the number of frames that are selected for each camera.
4	<b>Frame Select</b>	Adjusts the frames for each camera.
5	<b>Resolution</b>	Displays the available resolution options. See additional information below.
6	<b>Quality</b>	Affects the quality of the video. Increasing the quality of the camera can considerably reduce the amount of pixilation within the image, but it also increases the file size.
7	<b>Sensitivity</b>	Adjusts the rate at which the key frame refreshes. Sensitivity directly affects the codec being used to record the video. Adjusting this setting can have drastic negative effect on the quality of the video. It is highly recommended that this setting always be left at the default setting unless instructed by a system administrator.

The resolution affects the total number of frames per second that are available. The table below breaks down the number of frames available on a 240IPS DVR.

Frames Available on Fusion DVRs		
	240 IPS	480 IPS
Resolution	Available Frames	
360 x 240	240	480
720 x 240	120	240
720 x 480	60	120

## 5.5.2 FRAME SETUP (LOW-END)

FRAME SETUP allows you to adjust the Frames Per Second the cameras are recording.

Resolution : 320x240 Video Out time(sec) 5

Reset all Frame settings to the factory Default Set Default

**FRAME ADJUSTMENT :**  
Adjusts the frames for each individual camera.

**RESOLUTION :**

640x480 - (Highest resolution) Selecting this option reduces the total available frames to 30 FPS.

640x240 - (Medium Resolution) Selecting this option reduces the total available frames to 60 FPS.

320x240 - (Normal Resolution) Selecting this resolution gives you the maximum number of frames (120FPS).

**QUALITY :**

This option increases the overall look of the image. The better the Quality the less 'pixilized' the image appears. Increasing the quality also increases the overall size(kb) of the image.

**SENSITIVITY :**

**WARNING! USE CAUTION WHEN ADJUSTING THIS SETTING.** This option can cause video not to be recorded. Use this option only after consulting with a manufacturer service technician.

Total FPS is 3 / 3

Camera	FPS	Resolution	Quality	Sensitivity	Video Out
01	0		Normal	7	<input type="checkbox"/>
02	3		Normal	7	<input type="checkbox"/>
03	0		Normal	7	<input type="checkbox"/>
04	0		Normal	7	<input type="checkbox"/>
05	0		Normal	7	<input type="checkbox"/>
06	0		Normal	7	<input type="checkbox"/>
07	0		Normal	7	<input type="checkbox"/>
08	0		Normal	7	<input type="checkbox"/>
09	0		Normal	7	<input type="checkbox"/>
10	0		Normal	7	<input type="checkbox"/>
11	0		Normal	7	<input type="checkbox"/>
12	0		Normal	7	<input type="checkbox"/>
13	0		Normal	7	<input type="checkbox"/>
14	0		Normal	7	<input type="checkbox"/>
15	0		Normal	7	<input type="checkbox"/>
16	0		Normal	7	<input type="checkbox"/>

Annotations: 1 points to Video Out time(sec), 2 points to Camera 01 FPS, 3 points to Camera 02 FPS, 4 points to Total FPS, 5 points to Quality, 6 points to Sensitivity, 7 points to Video Out checkbox, 8 points to Resolution, 9 points to Set Default button.

1	<b>Set Default</b>	Selecting this option resets all camera frames and resolutions to the default settings.
2	<b>Camera Number</b>	The cameras are given different numbers to distinguish them when viewing the frame status. Adjust the recorded frames per second by sliding the bar to the left and right.
3	<b>Number of Frames</b>	Displays the number of frames that are selected for each camera.
4	<b>Frame Select</b>	Adjusts the frames for each camera.
5	<b>Quality</b>	Affects the quality of the video. Increasing the quality of the camera can considerably reduce the amount of pixilation within the image, but it also increases the file size.
6	<b>Sensitivity</b>	Adjusts the rate at which the key frame refreshes. Sensitivity directly affects the codec being used to record the video. Adjusting this setting can have drastic negative effect on the quality of the video. It is highly recommended that this setting always be left at the default setting unless instructed by a system administrator.
7	<b>Video Out</b>	Displays the video feed on an output device.
8	<b>Resolution</b>	Displays the available resolution options. See additional information below.
9	<b>Video Out Time</b>	When the Video Out box is checked, the Video Out Time designates the amount of time the channel will be displayed on the video output device.

The resolution affects the total number of frames per second that are available. The table below breaks down the number of frames available on a 240IPS DVR.

Frames Available on Fusion DVRs		
	240 IPS	480 IPS
Resolution	Available Frames	
360 x 240	240	480
720 x 240	120	240
720 x 480	60	120

## 5.6 RECORDING SCHEDULE

Creating a customized Schedule is important to maximize the efficiency of the DVR. This DVR offers numerous options to allow for a wide variety of different needs and requirements.

The screenshot displays the 'Recording Schedule' interface of a DVR. Numbered callouts point to various features:

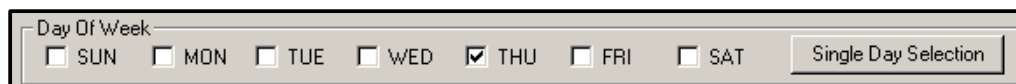
- 1**: Pre-Defined Schedules section, including buttons for 'All set to Motion', 'All set to Continuous', 'Default Schedule 1', and 'Default Schedule 2'.
- 2**: 'Day of week' selection area with checkboxes for SUN, MON, TUE, WED, THU, FRI (checked), and SAT, along with a 'Single Day Selection' button.
- 3**: A large grid for selecting recording times. The left column lists schedules from 'Sch 01' to 'Sch 12'. The top row represents hours from 0 to 23. A 'Set' button and 'Clear' button are at the bottom right of the grid.
- 4**: A text prompt below the grid: 'Highlight a time period and press the Set or Clear button'.
- 5**: 'Special day recording schedule' section, showing a date dropdown set to '4/29/2005' and buttons for 'Normal day mode', 'Delete special day', and 'Save special day'.
- 6**: 'Power Off Options' section with a 'Power Off Options' button.
- 7**: 'Schedule Number' field showing 'Sch 01' with navigation arrows and 'Delete' and 'Delete All' buttons.
- 8**: 'Select All' section for 'Camera', 'Sensor', and 'Relay'. Each has a grid of 16 checkboxes (01-16). Under 'Camera', there are also 'All Motion' (M), 'All Continuous' (C), 'All Sensor' (S), and 'Not Selected' (X) options.
- 9**: 'Alarm Options' section at the bottom, including checkboxes for 'Sensor Event', 'Remote Alarm', 'Motion Event', and 'Emergency Alarm'. It also features 'Emergency IP' settings for IP 1 and IP 2, and a '1 sec.' timer.

1	<b>Pre-Defined Schedules</b>	These schedules are created for the general installation and have been predefined with basic configurations
		<b>All set to Motion</b> – All cameras are set to motion recording (24 hours/day, 7 days/week)
		<b>All set to Continuous</b> – All cameras are set to continuous recording (24 hours/day, 7 days/week).
		<b>Default Schedule 1</b> – All cameras are set to: ! 8AM-5PM Continuous recording ! 5PM-8AM Motion recording
		<b>Default Schedule 2</b> – All cameras are set to: ! Motion recording 24 hours/day, 7 days/week. ! Camera 1 associated to sensor input 1 ! Camera 2 associated to sensor input 2 ! Camera 3 associated to sensor input 3, etc.
2	<b>Day of Week</b>	When a day of the week is selected, the currently selected schedule <u>for that day</u> is modified.
3	<b>Schedule Time Chart</b>	Used to select the time for which each schedule will be enabled.
4	<b>Schedule Number</b>	The Schedule Number is simply a group of settings. Up to 32 schedules can be created. Think of the schedules as transparency paper with words written on them. When placed one on top of another, the words can still be seen from the layers below. These schedules allow a powerful detailed recording schedule to be created.
5	<b>Special Day Recording Schedule</b>	Customize a schedule for a particular day, such as a Parade Day, Holiday, etc.
6	<b>Camera, Sensor, Relay</b>	Designate which cameras, sensors, and relays are to be used for the given schedule. These also correlate the sensors and relay to the camera (i.e., which sensors will activate a camera(s), etc.)
7	<b>Alarm Options</b>	These are advanced options that send alarm events (either motion or sensor) to the remote alarm monitor software and FVMS.
8	<b>Power Off Options</b>	Allows the user to specify time frames for turning off and restarting the DVR unit automatically.

### 5.6.1 DAY OF THE WEEK

The **Day of Week** is simply the day of the week for which the schedule is being edited. If WED is checked, Wednesday's schedule is being edited.

The **Single Day Selection** button allows selection of multiple days at once. By selecting the Single Day Selection button placing multiple checks in the boxes is allowed, thereby selecting multiple days simultaneously.



Day Of Week

☐ SUN ☐ MON ☐ TUE ☐ WED ☒ THU ☐ FRI ☐ SAT

Single Day Selection

Clicking on **Single Day Selection** will cause the button to change to **Multi-Day Selection** this enables you to select multiple days to configure at once, instead of changing the day.

### 5.6.2 CREATING A SIMPLE SCHEDULE (BY EXAMPLE)

Creating schedules is easy with a little experience.

In the following example, the steps for creating a simple schedule for cameras 1 to 4 are detailed.

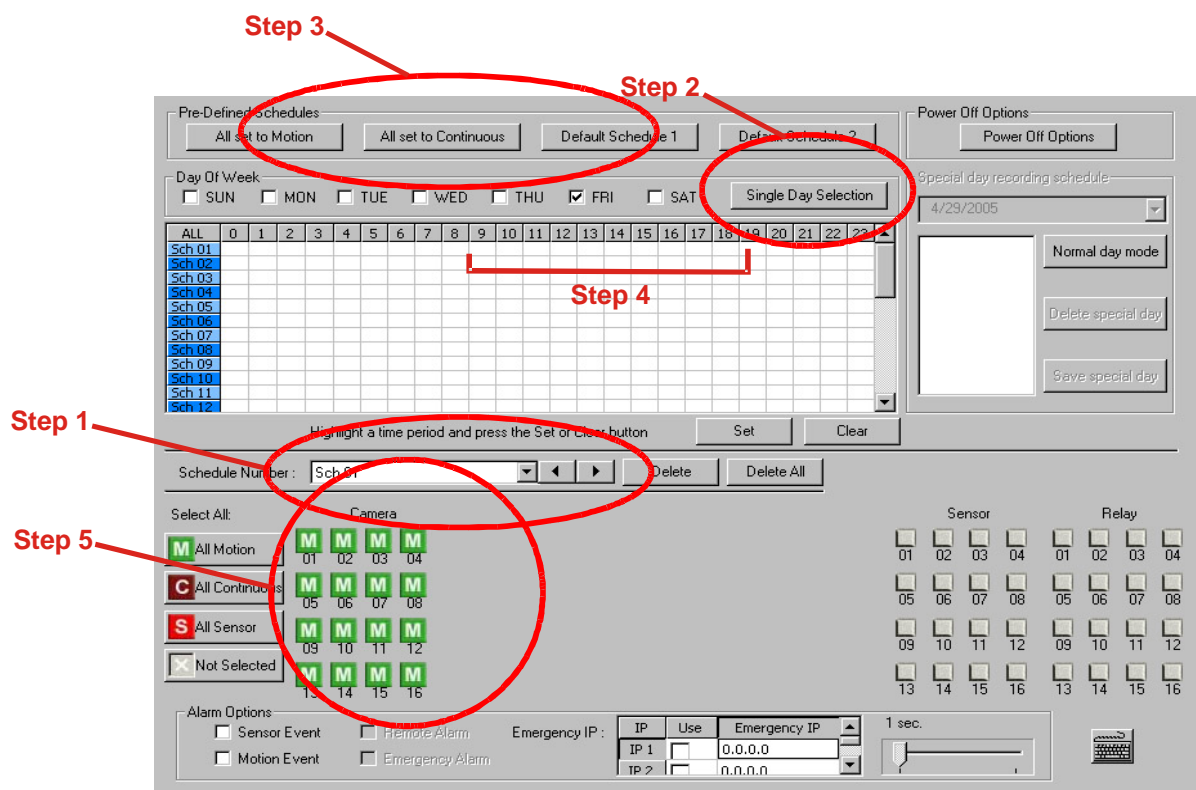
**The schedule will be as follows:**

1. MON-FRI (9AM-5:59PM) all 4 cameras will record using MOTION recording.
2. MON-FRI (6PM-8:95AM) all 4 cameras will record using CONTINUOUS recording.
3. SAT-SUN (12AM-11:59PM) all 4 cameras will record using MOTION recording.

To do this, a total of 3 schedules will be created.

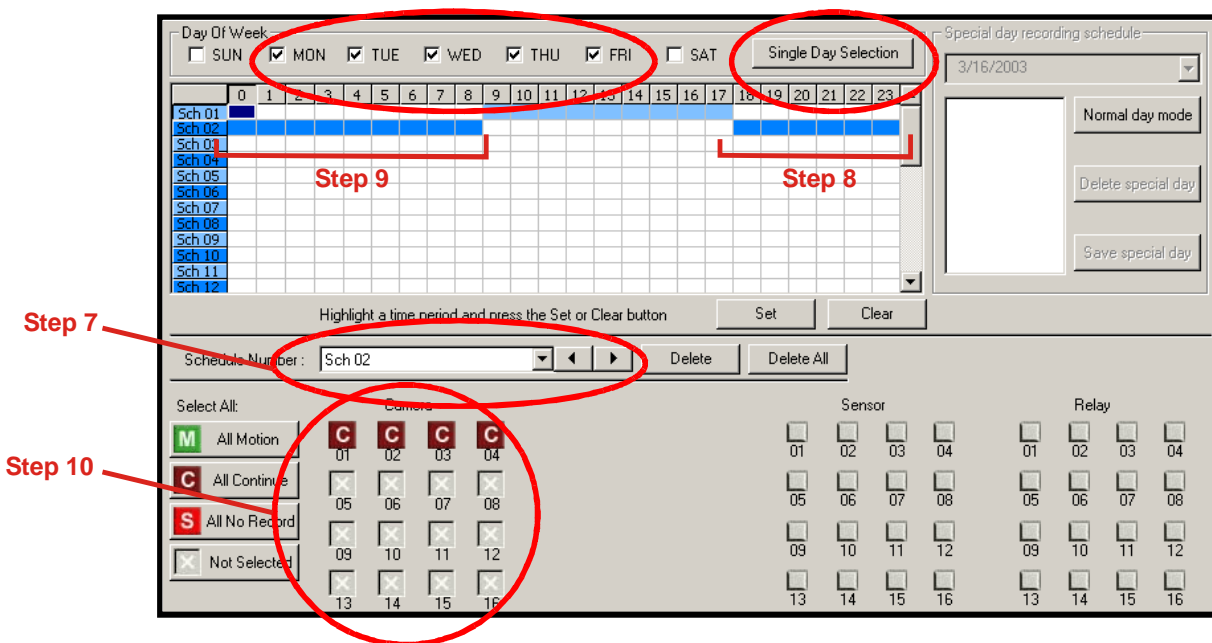
**Steps 1-6: Schedule cameras 1-4 to record on MOTION from 9:00am-5:59pm Monday through Friday.**

1. Select **Sch01** from the **Schedule Number** drop down list.  
(This should already be selected by default)
2. Select the **Single Day Selection** button, then select **Yes**.
3. Place a check in the **MON, TUE, WED, THU, and FRI** days of the week.
4. On the **Sch01** line on time selector grid, highlight hours 09-17.  
Press Set.
5. Press **Camera** buttons 1-4 until the green **Motion** buttons are selected.
6. Press **Apply** to save.



**Steps 7-11: Schedule cameras 1-4 to record on CONTINUOUS from 6:00pm-8:59am Monday through Friday.**

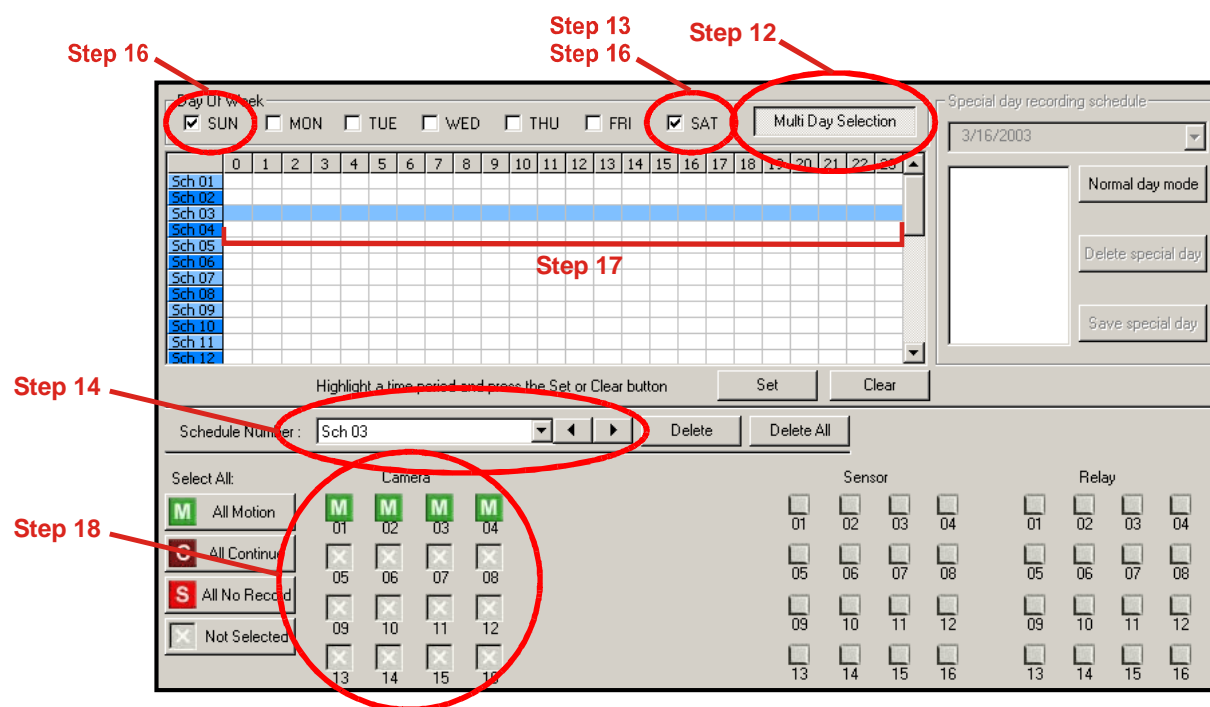
7. Select **Sch02** from the **Schedule Number** drop down list.
8. On the **Sch02** line again, highlight the hours 18-23 (for 6:00pm-midnight) and press **Set**.
9. On the **Sch02** line on time selector grid, highlight the hours 00-08 (for midnight to 8:59am) and press **Set**.
10. Press **Camera** buttons 1-4 until the Maroon **Continuous** buttons are selected.
11. Press **Apply** to save.





**Steps 12-19: Schedule cameras 1-4 to record on MOTION from 12:00am-11:59pm Monday through Friday**

12. Select the **Multi-Day Selection** button.
13. Place a check in the SAT days of the week box.
14. Select **Sch03** from the **Schedule Number** drop down list.
15. Select the **Single Day Selection** button, then select **Yes**.
16. Place a check in the **SAT** and **SUN** days of the week boxes.
17. On the **Sch03** line on the time selector grid, highlight hours 00-23 and press the **Set** button.
18. Press **Camera** buttons 1-4 until the Green **Motion** buttons are selected.
19. Press **Apply** to save.



### 5.6.3 SCHEDULING SENSORS AND RELAYS (BY EXAMPLE)

It is easy to add advanced recording functionality using Sensor Inputs and Relay Outputs.

**SENSOR** - Sensor Inputs can be programmed to instantly start one or more cameras recording when an alarm occurs. These alarm events can also activate Relay Outputs as desired.

**RELAY OUTPUT** - Relay Outputs can be set to activate when motion alarms or sensor alarms occur.

**The schedule will be as follows:**

1. SUN-SAT (12AM-11:59PM) Cameras 1 and 2 will be activated on Sensor #3 and/or Sensor #5, which will then activate Relay Output #7 and #13.
2. SUN-SAT (12AM-11:59PM) Camera 3 will be set to Record on MOTION. When motion occurs it will activate Relay Output #7 and #10.
3. SUN-SAT (12AM-11:59PM) Sensor #6 will activate Relay Output #8 when an alarm occurs. This event will NOT cause any cameras to record.

To do this, a total of 3 schedules will be created.

**Steps 1-8: Schedule cameras 1 and 2 to be activated on Sensor # 3 and/or Sensor #5 which will then activate Relay Output #7 and #13.**

1. Select **Sch01** from the **Schedule Number** drop down list.  
(This should already be selected by default.)
2. Select the **Single Day Selection** button, then select **Yes**.
3. Place a check in the boxes for **SUN, MON, TUE, WED, THU, FRI**, and **SAT** days of the week.
4. On the **Sch01** line (time selector grid), highlight the hours 00-23 and press **Set**.
5. Press **Camera** buttons #1 and #2 until the Red **Sensor** buttons are selected.
6. Press **Sensor** buttons #3 and #5.
7. Press **Relay** buttons #7 and #13.
8. Press **Apply** to save.

The screenshot shows a software interface for scheduling cameras. At the top, there's a 'Day Of Week' section with checkboxes for SUN, MON, TUE, WED, THU, FRI, and SAT, all of which are checked. To the right is a 'Multi Day Selection' button. Below this is a large grid with 12 rows (Sch 01 to Sch 12) and 24 columns (0 to 23). The first row (Sch 01) is highlighted in blue. To the right of the grid is a 'Special day recording schedule' section with a date dropdown set to 3/17/2003 and buttons for 'Normal day mode', 'Delete special day', and 'Save special day'. Below the grid are 'Set' and 'Clear' buttons. At the bottom, there's a 'Schedule Number' dropdown set to 'Sch 01', with 'Delete' and 'Delete All' buttons. Below that is a 'Select All' section with buttons for 'All Motion' (M), 'All Continue' (C), 'All No Record' (S), and 'Not Selected' (X). To the right of these are three columns of buttons: 'Camera' (01-16), 'Sensor' (01-16), and 'Relay' (01-16). In the Camera column, buttons 01 and 02 are red. In the Sensor column, buttons 03 and 05 are blue. In the Relay column, buttons 07 and 13 are green.

**Steps 9-15: Schedule camera 3 to record using MOTION.**  
**When Motion occurs it will activate Relay Output #7 and #10.**

9. Select **Sch02** from the **Schedule Number** drop down list.
10. Select the **Single Day Selection** button, then select **Yes**.
11. Place a check in the boxes for **SUN, MON, TUE, WED, THU, FRI, and SAT** days of the week.
12. On the **Sch02** line (time selector grid), highlight the hours 00-23 and press **Set**.
13. Press **Camera** button #3 until the green **Motion** button is selected.
14. Press **Relay** buttons #7 and #10.
15. Press **Apply** to save.

The screenshot displays the 'Day Of Week' configuration window. At the top, checkboxes for all days of the week (SUN through SAT) are checked, and the 'Multi Day Selection' button is visible. Below this is a grid for selecting recording times for various schedules (Sch 01 to Sch 12). The 'Sch 02' row is highlighted in blue, indicating it is the active schedule. To the right of the grid is a 'Special day recording schedule' section with a date dropdown set to '3/16/2003' and buttons for 'Normal day mode', 'Delete special day', and 'Save special day'. Below the grid, there are 'Set' and 'Clear' buttons. At the bottom, the 'Schedule Number' is set to 'Sch 02', with 'Delete' and 'Delete All' buttons. The bottom section contains three columns of buttons: 'Select All' (with 'M' for All Motion, 'C' for All Continue, 'S' for All No Record, and 'X' for Not Selected), 'Camera' (with buttons 01-16, where 03 is green), 'Sensor' (with buttons 01-16), and 'Relay' (with buttons 01-16, where 07 and 10 are green).

**Steps 16-22: Schedule Sensor #6 to activate Relay #8 when an Alarm occurs.**  
**NOTE - This will not cause any cameras to record.**

16. Select **Sch03** from the **Schedule Number** drop down list.
17. Select the **Single Day Selection** button, then select Yes.
18. Place a check in the boxes for **SUN, MON, TUE, WED, THU, FRI, and SAT** days of the week.
19. On the **Sch03** line (time selector grid), highlight the hours 00-23 and press **Set**.
20. Press **Sensor** button #6.
21. Press **Relay** button #8.
22. Press **Apply** to save.

The screenshot displays a software interface for configuring recording schedules. At the top, a 'Day Of Week' section has checkboxes for SUN, MON, TUE, WED, THU, FRI, and SAT, all of which are checked. A 'Single Day Selection' button is also present. Below this is a large grid for scheduling, with rows labeled Sch 01 through Sch 12 and columns for hours 0 through 23. The row for Sch 03 is highlighted in blue across all hours. To the right of the grid is a 'Special day recording schedule' section with a date dropdown set to 3/16/2003 and buttons for 'Normal day mode', 'Delete special day', and 'Save special day'. Below the grid, there are 'Set' and 'Clear' buttons. Further down, a 'Schedule Number' dropdown is set to 'Sch 03', with 'Delete' and 'Delete All' buttons. At the bottom, there are three sections: 'Select All' with buttons for 'All Motion' (M), 'All Continue' (C), 'All No Record' (S), and 'Not Selected' (X); 'Camera' with a 4x4 grid of buttons numbered 01-16, all of which have an 'X' in the top-left corner; 'Sensor' with a 4x4 grid of buttons numbered 01-16, where button 06 is highlighted in blue; and 'Relay' with a 4x4 grid of buttons numbered 01-16, where button 08 is highlighted in green.

#### 5.6.4 VERIFYING A RECORDING SCHEDULE

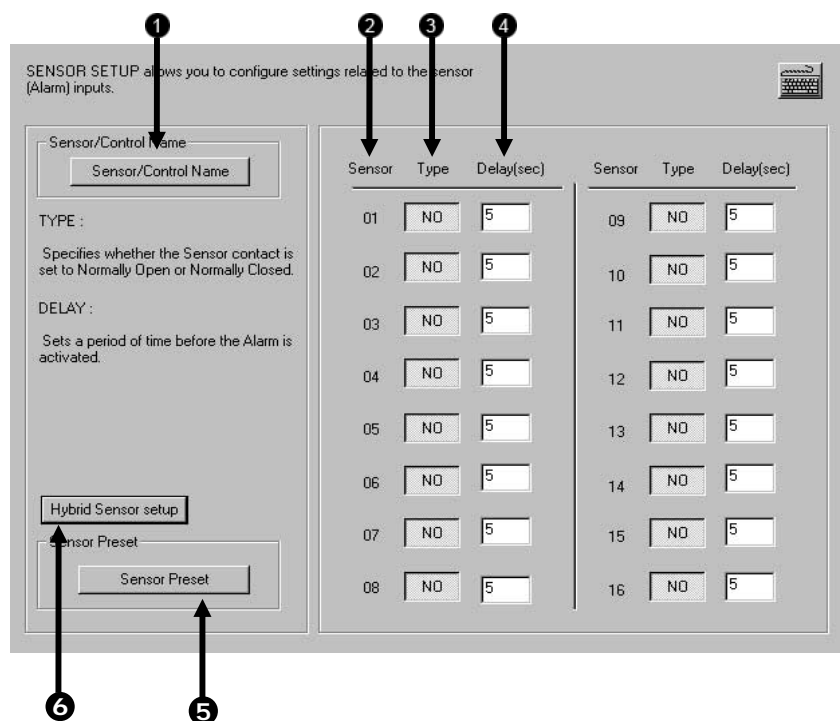
1. Select a single day of the week using the selection check box to the left of the specified day.
2. Next move down to the schedule grid.
3. Identify the schedule (or schedules) that have specific hours of the day high-lighted in light blue color. The horizontal axis of the schedule grid corresponds to the 24 hours of each day.
4. After verifying that all hours of the selected day are covered by at least one of the 32 independent schedules (vertical axis of schedule grid) now move your attention to the lower half of the schedule interface.
5. In the "Schedule Number:" selection drop down box, select the schedule(s) that were defined above for the current day and verify in each schedule number that the correct cameras are set to Continuous, Motion or Sensor based recording.

**NOTE:** If a specific camera is not to be recorded on a given day/schedule combination set the camera to "Not Selected", a white "X".

6. Proceed to repeat this process for each of the 7 days of the week until certain that the desired recording method is configured for each day.

## 5.7 SENSOR SETUP

The **Sensor Window** options enable, disable, and configure Sensors.



1	<b>Sensor/Control Name</b>	Opens a menu to allow custom naming of controls and sensors for easy identification.
2	<b>Sensor</b>	Displays the sensor number
3	<b>Type</b>	Selects whether the Sensor will be normally open (NO) or normally closed (NC).
4	<b>Delay (sec)</b>	Once the recording duration has expired, the Delay (sec) will wait to reactivate the alarm.
5	<b>Sensor Preset</b>	Sets the sensor preset for camera channels.
6	<b>Hybrid Sensor Setup</b>	Allows you to configure Hybrid (Network) sensors.

## 5.8 NETWORK SETUP



**CAUTION:** Do not join this DVR to a Network Domain. Domains force policies that can negatively affect the DVR. More importantly, by default, the user must press CTRL-ALT-DEL to login; this Keyboard combination is disabled and the software will not be able to load.

NETWORK SETUP allows you to enable and configure the remote access to the DVR.

1 ☐ Disable Remote Control

2 TimeOut Value : 30

3 Emergency Port : 4001 (1024 - 5000)

4 Center Port : 4000 (1024 - 5000)

5 Image Port : 4002

6 Search Port : 4003 (1024 - 5000)

17 Upgrade Port : 7200 (7200 - 7300)

7 Web Function

8 ☐ Enable Web Viewer

9 Internet Port : 4006

10 ☒ Enable Health Check

Health Check Port : 4005

Transport Setup

11 Quality : NORMAL

12 Resolution : 350\*240

13 Transport Rate : 100

PPP Setup(Emergency)

☐ Use PPP

Password :

Confirm :

Phone Number :

Modem Select : N/A

Audio Communication

☐ Enable Audio Communication

Audio Port : 3002

Keyboard Control

☐ Use Keyboard Control

Setup Keyboard Control

View IP, DNS and Gateway Information: View IP Address

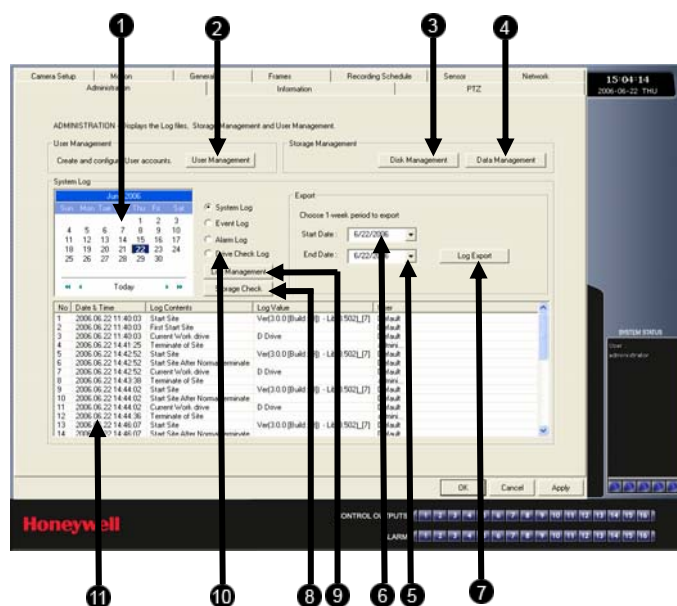
16 18 15 14

1	<b>Disable Remote Control</b>	This setting enables or disables access to the DVR from remote connections.
2	<b>Time Out Value</b>	When a user attempts to connect to the DVR and the connection does not succeed during the timeout period designated, the connection will be terminated.
3	<b>Emergency Port</b>	The Emergency Port is the port used to connect with the Alarm Monitor software. If connecting through a firewall, this port must be opened to incoming and outgoing traffic.
4	<b>Center Port</b>	The Center Port is the port used to connect to the Fusion Remote Software. This is the Port that must be specified inside the Fusion Remote software to connect to the DVR. If connecting through a firewall, this port must be opened to incoming and outgoing traffic.



5	<b>Image Port</b>	The Image Port is the port used to transfer the video to the Fusion Remote Software. If connecting through a firewall, this port must be opened to incoming and outgoing traffic.
6	<b>Search Port</b>	The Search Port is the port used to transfer the Search information to the Fusion Remote Software. If connecting through a firewall, this port must be opened to incoming and outgoing traffic.
7	<b>Web Function</b>	Enables the use of the Web DVR interface as well as defines users who can access it.
8	<b>Enable Web Viewer</b>	This is the Port that is used by the DVR to transmit images through the Internet.
9	<b>Internet Port</b>	Allows FVMS to receive information regarding the health of the DVR.
10	<b>Enable Health Check</b>	Sets the port DVR Health information is transmitted over. This port must match the port set in FVMS.
11	<b>Quality</b>	Adjusts the resolution quality when transferring video to a remote client.
12	<b>Resolution</b>	Adjusts the resolution of the images being sent to remote clients. By setting the resolution low, the images will be sent faster, however, the image quality will be reduced considerably. When set to Original, full quality video will be sent (720 x 480) however this is very bandwidth intensive.
13	<b>Transport Rate</b>	Throttles the bandwidth on the DVR. This option is based on percentages of images sent.
14	<b>View IP Address</b>	Allows viewing of the IP configuration of the DVR.
15	<b>PPP Setup (Emergency)</b>	Defines the modem and PPP information to dial to a remote client when an Alarm Monitor Event is activated.
16	<b>Enable Audio Communication</b>	Allows one way audio communication from a remote client to the DVR.
17	<b>Upgrade Port</b>	Allows communication from a remote client to the DVR, allowing upgrades through the specified port.
18	<b>Use Keyboard Control</b>	Allows use of an RS232 Keyboard

## 5.9 ADMINISTRATION



1	<b>Calendar</b>	Displays the days with Log information in a bold format.
2	<b>User Management</b>	Opens the User Management Window to create, edit, and delete DVR user accounts.
3	<b>Disk Management</b>	Gives detailed information on hard drive partitions connected to the DVR unit.
4	<b>Data Management</b>	Allows the user to specify when recording data should be checked and deleted.
5	<b>End Date</b>	Specifies a date to end the Log Export function.
6	<b>Start Date</b>	Specifies a date to begin the Log Export function.
7	<b>Log Export</b>	Allows the log file to be exported in weekly increments.
8	<b>Storage Check</b>	Allows configuration of the storage check and alert features of the DVR.
9	<b>Log Management</b>	Provides basic Log Management options (password protected).
10	<b>Log Selector</b>	Select which log you wish to view.
11	<b>Log Display Window</b>	Displays the Log Files of the selected day.

## 5.9.1 USER MANAGEMENT

The User Management Console has options for creating, editing, and deleting user accounts. Each user account can be assigned different privileges that limit their usage of the DVR system. Users can be given administrator privileges by enabling all rights, however only the true administrator account can log into the User Management Console

1	<b>User Information</b>	Enter the User Information and Password.	1
2	<b>Permission</b>	Used to specify the types of permissions a user may perform on the DVR.	2
3	<b>Hidden Camera</b>	Allows an administrator to hide certain cameras from a user. The user will not be able to view the cameras in Live Mode.	3
4	<b>User Rank</b>	This option defines hierarchal privileges when conflicts arise with PTZ and Setup access. (one being the highest priority)	4
5	<b>Select Site</b>	(Only used with the Central User Management software). This option defines the DVRs to which the User has access.	

**NOTE:.** Every DVR comes with an Administrative account and Default account loaded on them. The Default account should not be used as the primary account. Upon a reboot of the unit for any reason the Default account will automatically be loaded. For applications where maximum security is essential, it is recommended that all privileges be stripped from the Default user account and all cameras be set to Forbidden.

## 5.9.2 USER RANK

The User Ranking structure allows the option to assign a privilege system (1-10 where one has the most rights) to users of the DVR. For example. Since only one user is allowed to use the PTZ controls at any one time, an administrator with a higher rank can kick another user out and take control of the PTZ.

The User Rank option affects:

<b>SETUP ACCESS</b>	Each DVR can only have 1 user accessing Setup at any given time. A user with a higher rank will kick another user out and then open Setup.
<b>PTZ CONTROL</b>	Each DVR can only have 1 user using the PTZ controls at any given time. A user with a higher rank will kick another user out and then open the PTZ controls.

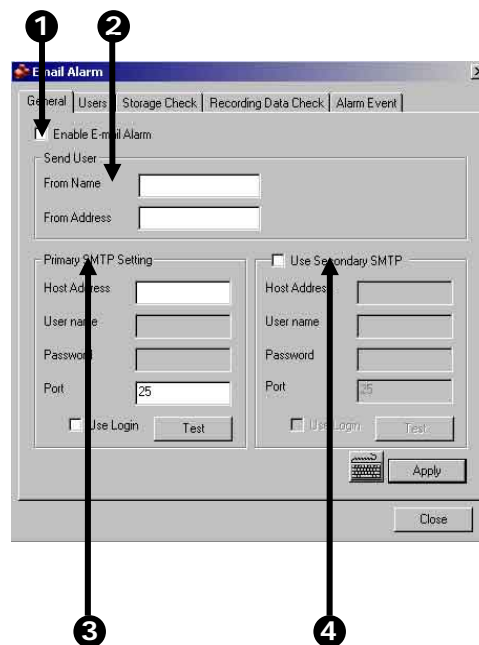
## 5.9.3 CHANGING THE ADMINISTRATOR PASSWORD

1. Inside Setup, open the user management console. An administrator login will appear with a **Change Password** button near the bottom right of the window.
2. Select the Change **Password** button, then enter the new password and press **OK** to finish.

## 5.9.4 STORAGE CHECK

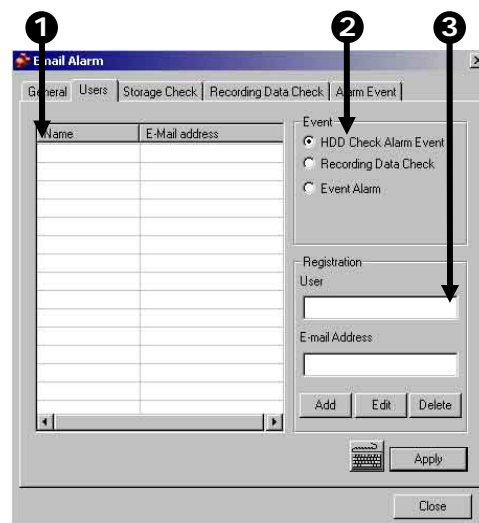
### 5.9.4.1 General

1	<b>Enable E-mail Alarm</b>	Enables an E-mail to be sent upon an alarm.
2	<b>Send User</b>	Used to specify the sender information.
3	<b>Primary SMTP Setting</b>	This option defines the settings for Simple Mail Transfer Protocol (SMTP)
4	<b>Secondary SMTP</b>	Defines a secondary SMTP.



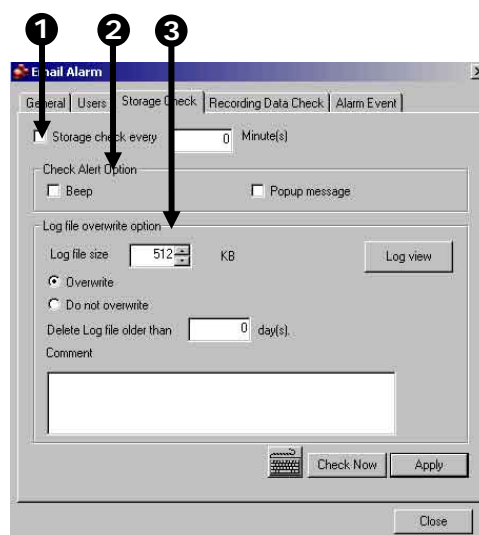
### 5.9.4.2 Users

1	<b>E-mail list</b>	List of E-mail recipients during a hard drive alarm event.
2	<b>Event</b>	Specifies the event that will trigger E-mails.
3	<b>Registration</b>	Enters a user name and e-mail address into the E-mail recipient list.
<b>Note:</b> A separate email notification for the same email address must be set for HDD Check, Recording Data Check and Alarm Event if you wish to receive each.		



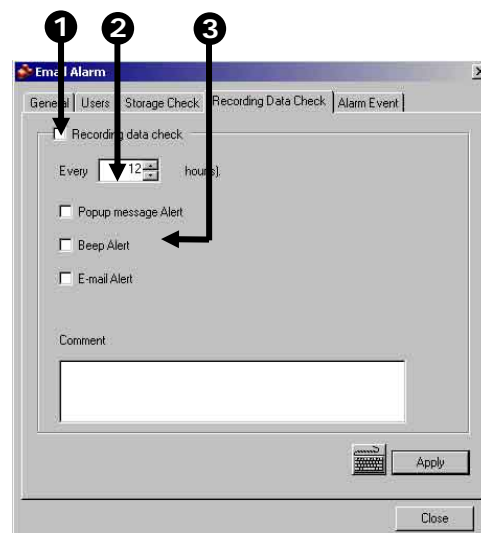
### 5.9.4.3 Storage Check

1	<b>Storage Check Every</b>	Sets amount of time between storage checks
2	<b>Check Alert Option</b>	Specifies the event that will trigger E-mails.
3	<b>Log file overwrite option</b>	Specifies the Log file size, whether to overwrite old logs and when to delete old logs.



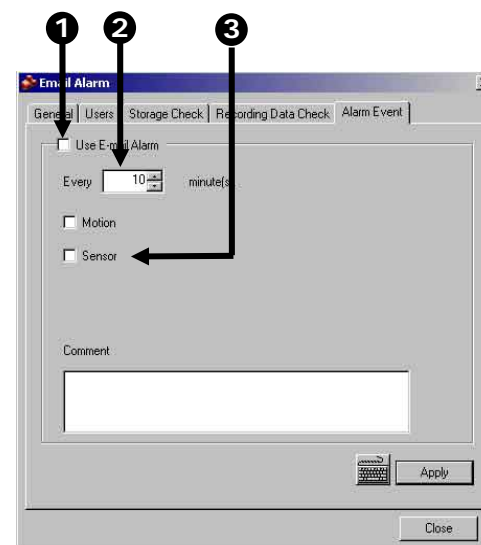
#### 5.9.4.4 Recording Data Check

1	<b>Recording Data check</b>	Enables the recording data check.
2	<b>Schedule</b>	Specifies the time between recording data checks.
3	<b>Alert</b>	Specifies the type of alert upon a recording data check alarm.



#### 5.9.4.5 Alarm Event

1	<b>Use Email Alarm</b>	Sets amount of time between storage checks
2	<b>Schedule</b>	Specifies the time between recording data checks.
3	<b>Motion/Sensor Alerts</b>	Specifies the type of alert upon a recording data check alarm.



## 5.10 SITE INFORMATION

This screen displays various information about your DVR.

The screenshot shows the 'SITE INFORMATION' screen with the following fields and callouts:

- 1** points to the **Decoder** field.
- 2** points to the **Video Format** field (displaying NTSC).
- 3** points to the **Server Version** field (displaying DVR Version 3.0.0).
- 4** points to the **Site Code** field (displaying 100-0 0).
- 5** points to the **DVR Serial Number** field.
- 6** points to the **CBSN** field.
- 7** points to the **Drive Information** section, which lists details for drives C, D, E, F, and G.
- 8** points to the **Telephone Number** section, including **Contact Number** and **Tech. Support** fields.
- 9** points to the **NOTES** text area.

The **Drive Information** section displays the following data:

Drive	Total Space	Free Space
C: Drive	5112 MB	857 MB
D: Drive	58557 MB	58378 MB
E: Drive	58557 MB	58490 MB
F: Drive	58557 MB	58490 MB
G: Drive	58572 MB	58506 MB

1	<b>Decoder</b>	Displays decoder information.
2	<b>Video Format</b>	Displays Video Format (NTSC/PAL) of the DVR.
3	<b>DVR Server Version</b>	Displays the software version on the DVR.
4	<b>Site Code</b>	User-specified unique identification name that is used by other DVR software to connect to the DVR.
5	<b>DVR Serial Number</b>	Displays the serial number of the DVR.
6	<b>CBSN</b>	Displays the serial number of an internal hardware component inside the DVR.
7	<b>Drive Information</b>	Displays the Total Space and Free Space of the drives installed in the DVR.
8	<b>Telephone Number</b>	Displays user-specified contact numbers.
9	<b>Notes</b>	Enter any notes about the DVR.



## 5.11 PTZ

The PTZ Setup enables PTZ cameras, creates Presets, Tours, and adjusts speed settings. Many options listed here are features only available on selected cameras. Refer to the Advanced PTZ chapter in this manual for description on setting up a PTZ camera and PTZ options. Please refer to the section 7 for more information.

## 5.12 INSTANT RECORDING

Instant Recording is a feature that allows manual starting of a camera recording, superseding the current schedule. When Instant Recording is activated on a camera it also flags the specified video so that an Index Search can be performed at a later date to bring up all the Instant Recording instances.

This can be used, for example, when a suspicious object or person is being recorded and you want to flag that section of video for easy retrieval at a later date.

### Activate Instant Recording

1. From the Live View screen, double right-click on the camera on which to enable instant recording. An INSTANT label will be placed on the upper right corner of the video.
2. To turn the Instant Recording option OFF, double right-click the video a second time.

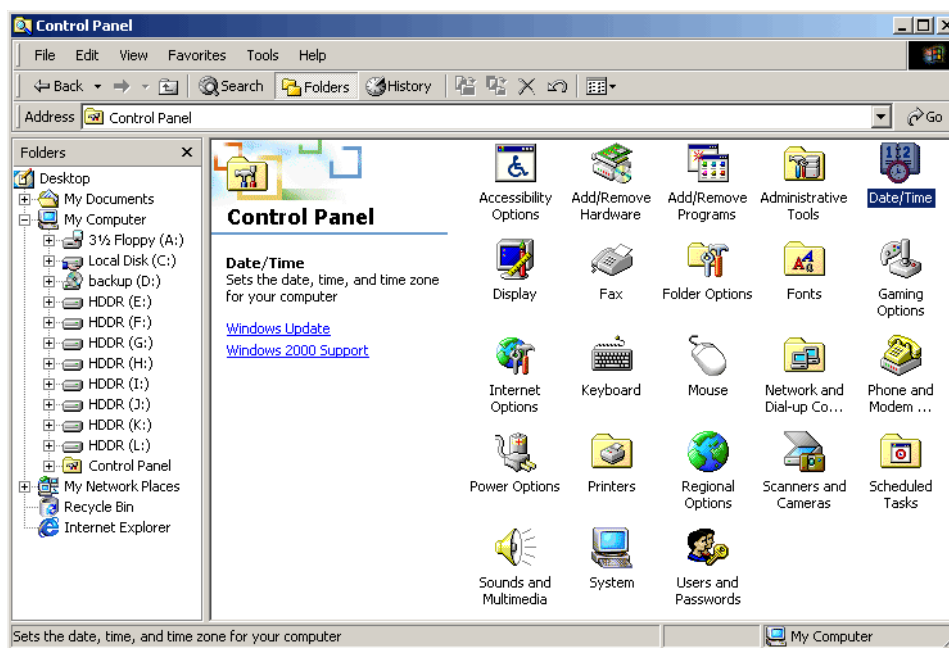
### Searching 'Instant Recorded' Video

1. Enter the Search Mode, press the INDEX SEARCH button, and then select the INSTANT RECORDING option.

## 5.13 ADJUSTING THE TIME, DATE, AND TIME ZONE

Exit to Windows by pressing the **Exit** button from the Main Display Screen and selecting **Restart in Windows Mode**. (See Section 4.3 – Display Screen.)

1. Open **Windows Explorer** by clicking on the **My Computer** icon (generally located at the top left-hand corner of the Desktop) and select **Explorer**.
2. Double-click on **Control Panel** to open it. If **Control Panel** is not listed, double-click **My Computer** to expand the folder tree.
3. Double-click **Date/Time** inside the Control Panel.

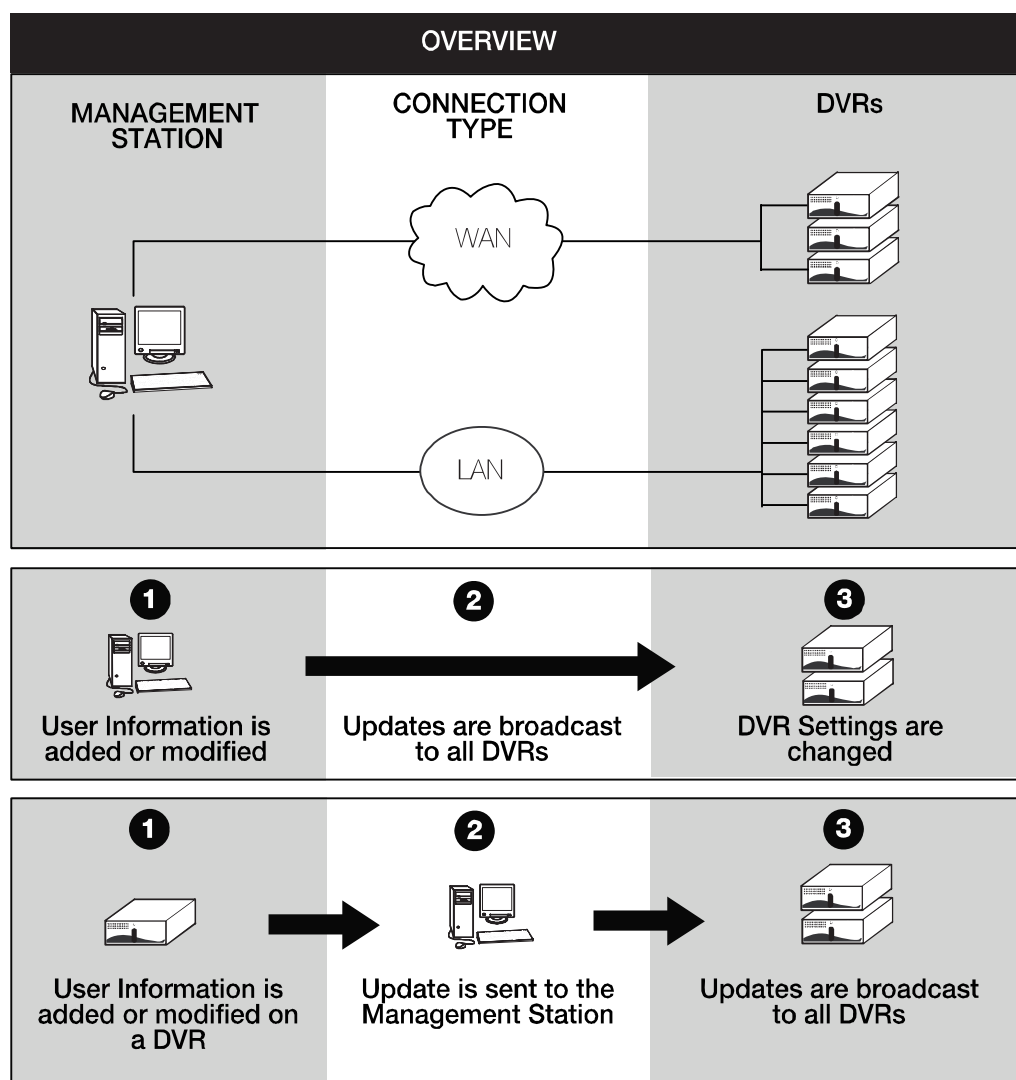


4. Adjust the date, time, and time zone.
5. When finished, close all open windows and restart the DVR unit by selection **Start → Shut Down**.

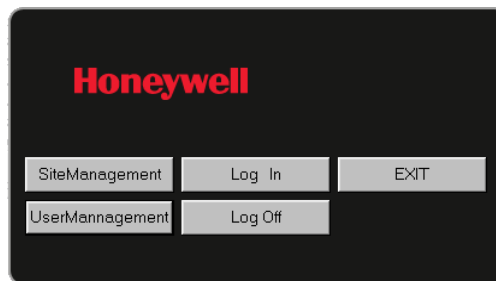
## 5.14 CENTRAL USER MANAGEMENT (OPTIONAL)

The Fusion DVRs are capable of utilizing a Central User Management system. This option allows, from one location, the creation, deletion and management of user accounts on multiple DVRs. This makes managing a large amount of DVRs easy and organized.

The Central User Management program is run on a computer or DVR that is to be used as the 'hub'. This computer (or DVR) acts as a broadcaster to send out updated information. The diagram below provides an overview of how the Central User Management functions.



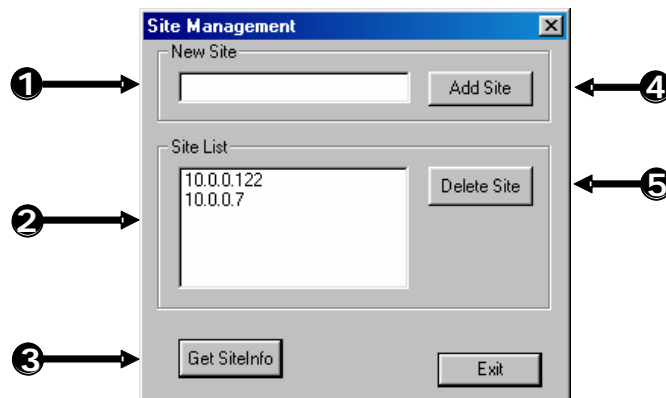
User Accounts can be modified from any DVR as well as the Management Station. Any changes made on a DVR will be sent to the Management Station which in turn will broadcast the changes to all DVRs.



<b>Site Management</b>	This option will Add/Delete DVRs that are managed by the Central User Management Software.
<b>User Management</b>	This option will Add/Delete/Modify User Accounts and User access privileges.
<b>Log In</b>	Only the Administrator can modify settings. In order to open the Site Management or User Management options, the Administrator must login.
<b>Log Out</b>	This option logs the Administrator OFF and locks access to the Site Management and User Management options.
<b>Exit</b>	This option Exits the Management Station Software.

## 5.14.1 SITE MANAGEMENT

The Site Management window is where DVRs are added and deleted from the managed list.



1	<b>IP Entry Field</b>	Used when adding a new DVR. This field accepts standard IP addresses.
2	<b>Site List</b>	Display the current DVRs being managed by the Central User Management Software.
3	<b>Get Site Info</b>	Updates the information from each DVR.
4	<b>Add Site</b>	Once the IP is entered into the IP Entry Field, pressing ADD Site will add it to the Site List. .
5	<b>Delete Site</b>	This option deletes a selected site from the Site List.

## 5.14.2 USER MANAGEMENT

The User Management options are where the User Privileges are specified.

The User Management Console has the ability to create, edit, and delete user accounts. Each user account can be assigned different privileges that limit their usage of the DVR system. Users can be given administrator privileges by enabling all rights, however only the true administrator account can log into the User Management Console.

1	<b>User Information</b>	Enter the User Information and Password.
2	<b>Permission</b>	Used to specify the types of permissions a user may perform on the DVR.
3	<b>User Rank</b>	This option defines hierarchal privileges when conflicts arise with PTZ, Setup and Login access.
4	<b>Forbidden Camera</b>	Allows an administrator to hide certain cameras from a user. The user will not be able to view the cameras in Live Mode.
5	<b>Select Site</b>	Defines the DVRs to which the User has access.

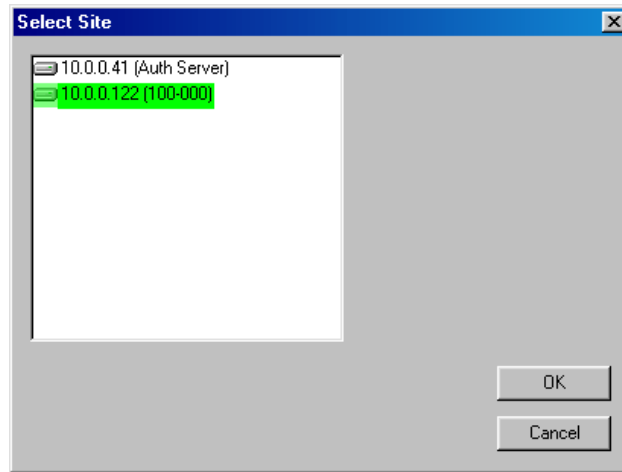
The screenshot shows the 'User' dialog box with the following sections and callouts:

- 1** points to the 'User Information' section, which includes fields for 'User Name' (containing 'JSmith'), 'Password' (masked with 'xxx'), and 'Confirm Password' (masked with 'xxx').
- 2** points to the 'Permission' section, which contains checkboxes for 'Search', 'Setup', 'Pan/Tilt', 'Backup', 'Shutdown', and 'TV OUT'. 'Search', 'Setup', and 'Pan/Tilt' are checked.
- 3** points to the 'User Rank' section, which is a dropdown menu currently set to '1'.
- 4** points to the 'Forbidden Camera' section, which contains a grid of checkboxes for 'Cam 1' through 'Cam 16'. All are currently unchecked.
- 5** points to the 'Select Site' button at the bottom of the dialog.

Other buttons visible at the bottom are 'OK' and 'Cancel'.

### 5.14.3 SELECT SITE

This option defines the DVRs to which the User has access.



To select a Site simply click on it. It will become highlighted. Select the Site again to deselect it.

### 5.14.4 SETTING UP THE CENTRAL MANAGEMENT USER SERVER


To set up a Central Management User Server follow these steps.

1. Install the Central Management User Software on a computer or DVR.
2. Run the software and open Site Management. (Logging in may be necessary)
3. Add one or more DVRs to the list and press **OK** to save and exit Site Management.
4. Open User Management.
5. Add or edit User settings and press **OK** to save and exit.
6. Minimize the Central User Management Software.

**NOTE:** If the software is closed, any updates made on the DVRs will not be broadcast to the other DVRs.

#### 5.14.5 ENABLING A DVR TO USE CENTRAL USER MANAGEMENT

To enable a DVR to use the Central User Management software follow these steps

1. Select the  button from the User Management Window.
2. Place a Check in the **Enable User Central Management** box.
3. Enter the IP address of the Authentication Server running the Central User Management software.
4. Enter the Server Port used by the Authentication Server. (Must be between 7000-7100)
5. Enter a Site port that the DVR will use to communicate with the Authentication Server. (Must be between 6000-6100)
6. Press OK to save and close.

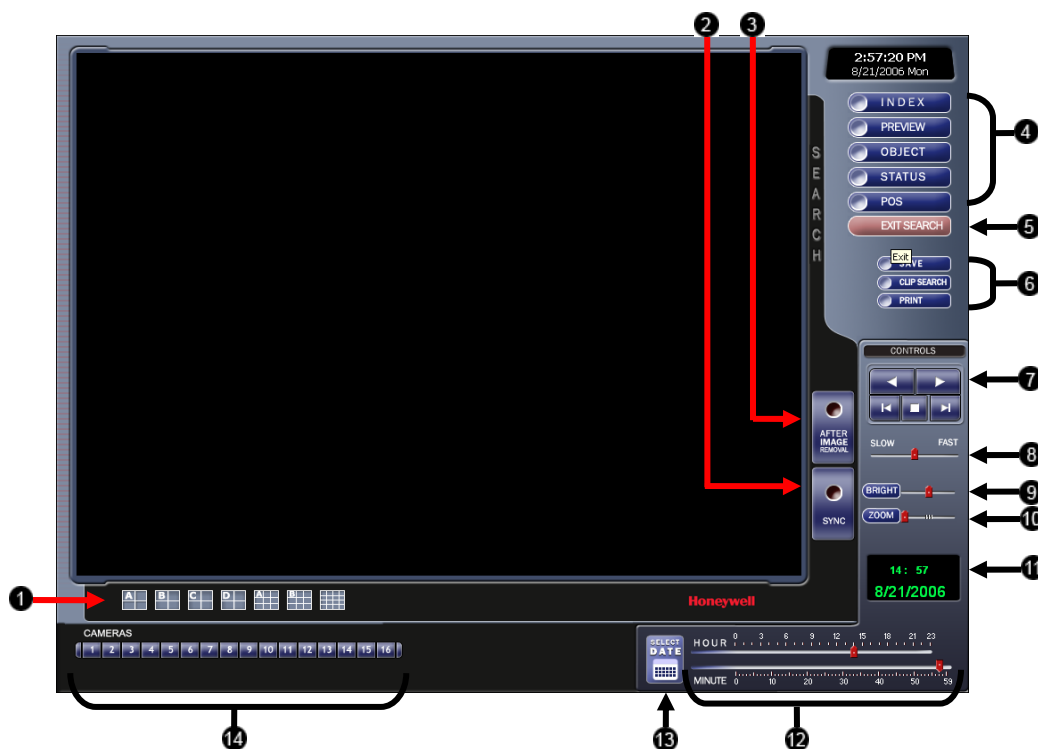


## SECTION 6 SEARCH OPTIONS

### 6.1 SEARCH OVERVIEW

The DVR unit has several options that allow easy searching to find a particular section of video. From Motion and Sensor indexing to calendar views showing which days have recorded video, the DVR unit is equipped to quickly find what you're seeking.

**Note:** 16Channel model shown below

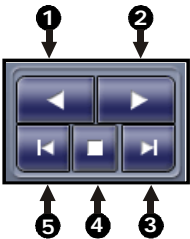


1	<b>Screen Division Buttons</b>	The Screen Division buttons provide views of one or more sets of cameras at a time.
2	<b>Sync</b>	Synchronizes a single channel of video to playback in real time. (ordinarily the video may playback slower or faster depending on several factors including how many PPS recorded and number of cameras playing at the same time.)
3	<b>After Image Removal</b>	Often times, extensive motion can create a 'digital blur' that can interfere with the quality of an image. By selecting the Clean Image option, two frames are interwoven to create a smooth, detailed image. This option only pertains to the 720x480 resolution.
4	<b>Search Options</b>	The search options are a set of functions that provide a way to easily find specific video clips and export them to a usable format, gives users the ability to control their POS solutions

<b>5</b>	<b>Exit Search</b>	Exits the Search Mode and returns to Live Mode.
<b>6</b>	<b>Clip Search/Save/ Print</b>	Allows a user to save single images to disk, print images, and load saved video from disk.
<b>7</b>	<b>Play Controls</b>	Allows a user to view selected video frame by frame, normal speed, and fast forward.
<b>8</b>	<b>Slow / Fast</b>	Decreases or increases playback speed.
<b>9</b>	<b>Bright</b>	Adjusts the brightness of the selected camera.
<b>10</b>	<b>Zoom</b>	Increase the size of the image (up to full screen).
<b>11</b>	<b>Search Date and Time</b>	Displays the date and time of the video being played.
<b>12</b>	<b>Hour/Minute Control</b>	Select the hour and minute by adjusting the sliding bar.
<b>13</b>	<b>Select Date</b>	Opens a calendar window and allows selection of a day to use within a search.
<b>14</b>	<b>Camera</b>	Enable or disable selected cameras for use when searching. (16 Channel Model Shown)

6.2 PLAY CONTROLS

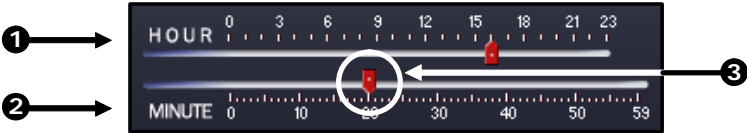
The Play Controls give the ability to play the video Frame by Frame, Normal Speed, and Reverse.



1	Play Reverse	Plays the video at normal speed in reverse.
2	Play (Normal Speed)	Plays the video at normal speed
3	Play (Frame by Frame)	Plays the video one frame at a time. Each time the button is pressed, the video progresses by one frame.
4	Stop	Stops the video that is playing.
5	Play Reverse (Frame by Frame)	Plays the video one frame at a time in reverse. Each time the button is pressed, the video progresses by one frame in reverse.

6.3 HOUR / MINUTE SELECTOR

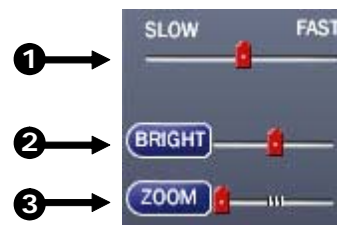
The Hour/Minute Control Bar allows a user to select the Hour and Minute using an easy-to-use slide bar. The user can control the slide bar not only by clicking and dragging the slider but also using the Wheel on the Scroll Mouse.



1	Hour Selector	Displays the hours 0 to 24 for a given day. Move the slide bar up and down to select an hour.
2	Minute Selector	Displays the minutes 0 to 60 for a selected hour.
3	Slide Bar Selector	Move up and down to select the hour and minute  <b>HINT:</b> By using the Wheel on the mouse, a user can easily move the Slide Bar Selector up and down. Simply click on the Slide Bar Selector with the mouse and then begin moving the Wheel up and down.

## 6.4 BRIGHTNESS / SPEED / ZOOM

The Brightness and Zoom features can get the most out of the images. Adjusting Brightness can brighten up an image to get more detail. Zoom can not only bring the image up full screen but also Zoom into a particular area of the image.



1	<b>Slow / Fast</b>	Increases or decreases playback speed.
2	<b>Brightness</b>	Used to adjust the brightness of an image.
3	<b>Zoom</b>	Used to zoom in on an image.

### 6.4.1 ADJUSTING THE BRIGHTNESS OF AN IMAGE

1. Select a single image to adjust by double-clicking on the desired image. Multiple images cannot be adjusted at one time.
2. Move the **Bright** slide bar to the right or left to adjust the brightness.
3. Reset the brightness by pressing the **Bright** button.

### 6.4.2 ZOOMING IN ON AN IMAGE

1. Select a single image to adjust by double-clicking on the desired image. Multiple images cannot be adjusted at one time.
2. Move the **Zoom** slide bar to the right or left to zoom in or out of an image.
3. Reset the zoom by pressing the **Zoom** button.

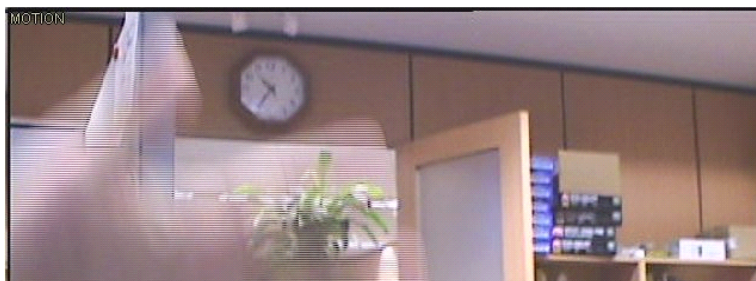
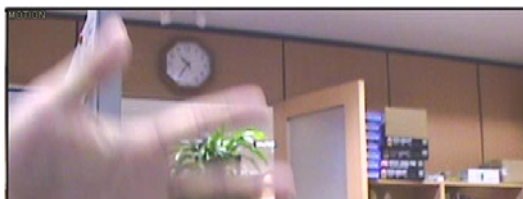
### 6.4.3 ZOOMING IN ON A PORTION OF AN IMAGE

1. Using the mouse pointer, point to the area of interest on the image and press the right mouse button.
2. Repeated pressing of the right mouse button will zoom in further.
3. Continue clicking the right mouse button and the image zoom will cycle back to the original size.

## 6.5 AFTER IMAGE REMOVAL

The DVR unit is capable of recording video using one of three different resolutions. When using the 720 x 480 resolution, two fields are mixed. Because of the timing gap between the two fields, according to the standardized image rules, after image might occur to high speed moving images. The Fusion DVR unit allows you to remove this by pressing the **After Image Removal** button.

The images below demonstrate the filtered screen.



## 6.6 SEARCH OPTIONS OVERVIEW

The Search Options allows the user to find the requested images quickly, enhance the image quality, and export the video or images in a number of ways.

- |                        |  |
|------------------------|--|
| <b>Index Search:</b>   | Used to perform a search based on Motion detection and Sensor activation. Allows for quickly narrowing down large amounts of recorded video based on particular criterion.   |
| <b>Preview Search:</b> | Allows for narrowing down recorded video in a 24 Hour period. Each day is broken into 24 images, one image for each hour of the day. (The images are taken from the first second of each hour). When an image is selected, the 'hour' chosen is then broken down into 6 images, one image for every 10 minute increment. When a 10-minute increment image is selected, 10 images are displayed, one for every minute within the 10 minute period. From this point, the selected image can be applied to the Main Search. |
| <b>Object Search:</b>  | Used to specify a region on an image and perform a search based on any motion that has occurred within that region.  |
| <b>Status Search:</b>  | Displays recorded video in a color coded format that allows easy selection of the portion of video you wish to play.   |

## 6.7 PERFORMING A BASIC SEARCH

There are several different types of searches that can be performed on the DVR unit. The most basic involves simply selecting the date, the time, the camera, and pressing play.

1. Select a date using the calendar.
2. Select a time by adjusting the hour and minute slide bars.
3. Select one or more cameras.
4. Press **Play**. Video can be played forwards, backwards, or frame-by-frame.

## 6.8 DAYLIGHT SAVINGS TIME

The DVR automatically adjusts for Daylight Savings Time changes. When the hour “jumps forward” no video is lost because an hour is simply skipped.

## 6.9 TIME SYNC

The Time Sync option synchronizes a single channel of video to playback in real time. Ordinarily the video may playback slower or faster depending on several factors, including how many PPS recorded and number of cameras playing at the same time.

In addition, the Time Sync option will be automatically enabled when an audio channel is selected inside Search.

1. Select a single image to synchronize by double-clicking on an image.
2. Select a channel of audio (optional).
3. Press the **Time Synch** button. The video will now playback in real time.

## 6.10 PRINTING AN IMAGE

The DVR can print a recorded image to a local or network printer.

1. From the Search screen, stop on the image to print. Double-click the image.  
**NOTE:** Only one camera can be selected at a time for this function to work.
2. Click on the **Print** button. A Print Options window appears. Depending on the printer being used, there may be several printing options available. Refer to the printer manual for more information.
3. Press the **Print** button to print the selected images.

**NOTE:** The message “NO DEFAULT PRINTERS INSTALLED” will display if no printer is installed.

## 6.11 ‘SAVE TO’ FUNCTION

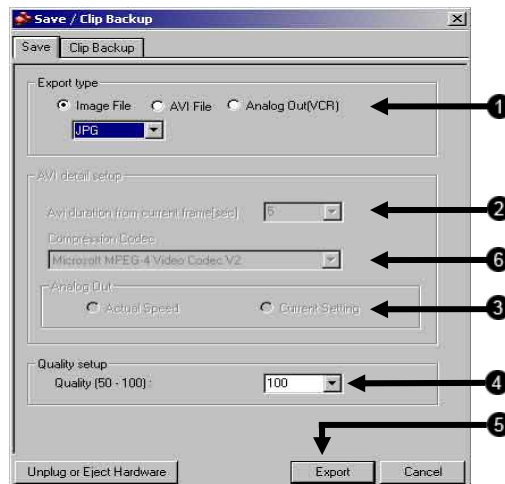
The DVR unit can export single images in the .JPG file format, save video clips in the .AVI format, or output to a VCR using the s-video port. The JPG and AVI file formats are extremely common with virtually universal computer support making them ideal formats to use. A digital signature is also attached to every .JPG and .AVI file exported by the DVR for use with the bundled Digital Verifier application. This function is unique to the DVR and its Verification software and should not interfere with viewing the files using other applications.

**JPG:** The format (.jpg) is optimized for compressing full-color or grayscale photographic images. JPG images are 24-bit (16.7 million color) graphics. JPG is used to export a single image or frame.

**AVI:** AVI image data can be stored uncompressed, but it is typically compressed using a Windows-supplied or third party compression and decompression module called a codec. AVI files save a video clip.

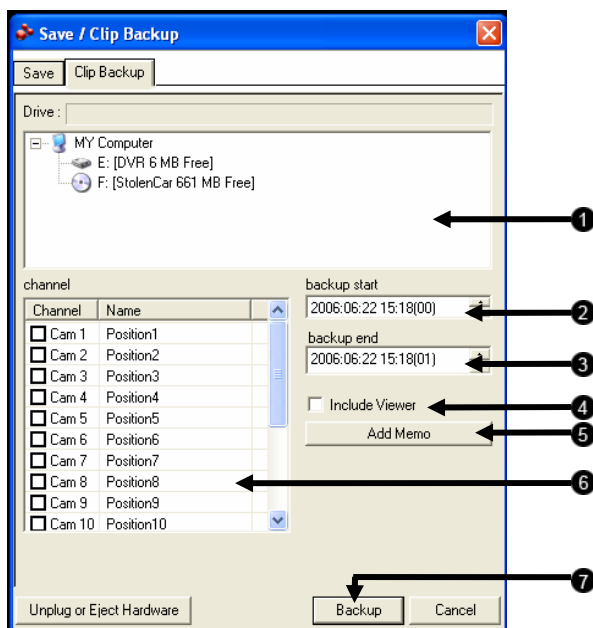
**Analog Out** Sends a full screen video signal to the s-video port of the DVR. This feature is only available on DVRs with an s-video out.





1	<b>Export Type</b>	Selects method used for export.
2	<b>AVI Duration</b>	Enter duration (in seconds) for recording the AVI file. Although 100 is the longest displayed, a manual time may be entered.
3	<b>Analog Out</b>	Sets whether to export video in real-time or based on the Speed Bar setting in the Search Menu.
4	<b>Quality Setup (image quality)</b>	It may be necessary to reduce the overall size of an AVI file; for example, to email to someone. AVI file sizes can be reduced by reducing the image quality. By reducing the image quality, the AVI video appears more pixilated. When size is not an issue, setting quality to 100 is highly recommended.
5	<b>Export</b>	The Export button begins the saving process. (Cancel closes the window without exporting.)
6	<b>Compression Codec</b>	You may choose the codec that will be used in order to compress the AVI file. Different codecs provide different benefits in quality, size and compatibility.

## 6.12 SINGLE CLIP BACKUP

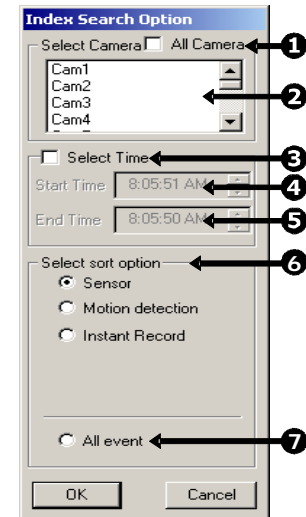


1	<b>Drive</b>	Allows the user to select which drive the backed up data will be saved on.
2	<b>Backup Start</b>	Allows the user to set the time that the Clip Backup will begin.
3	<b>Backup End</b>	Allows the user to set the time that the Clip Backup will end.
4	<b>Include Viewer</b>	Saves a copy that can be viewed with the Backup Viewer software.
5	<b>Add Memo</b>	Add a personalized memo to the backup copy.
6	<b>Channel</b>	Allows the user to select the camera channel that will be backed up.
7	<b>Backup</b>	Clicking Backup begins the Clip Backup process

## 6.13 INDEX SEARCH

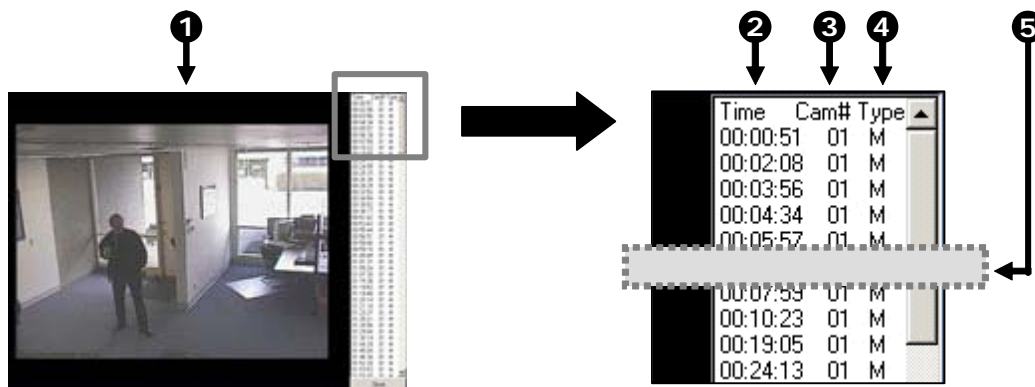
Using the **Index Search** can greatly decrease the amount of time spent searching through saved video. The Index Search allows a user to perform a search based on criteria such as Sensor, Motion and Instant Record events.

1	<b>Select All Cameras</b>	This option selects all cameras.
2	<b>Multiple camera search</b>	Select one or more cameras to search.
3	<b>Select Time</b>	The default search time is 24 Hours. If this option is select then a Start Time and End Time must be entered.
4	<b>Start Time</b>	Specifies the Start Time for the Index Search.
5	<b>End Time</b>	Specifies the End Time for the Index search.
6	<b>Sort Option</b>	Searches by the selected event: Sensor, Motion Detection, or Instant Record.
7	<b>All Event</b>	Searches on all events (sensor, motion, instant recording) for the selected camera(s).



### 6.13.1 PERFORMING AN INDEX SEARCH

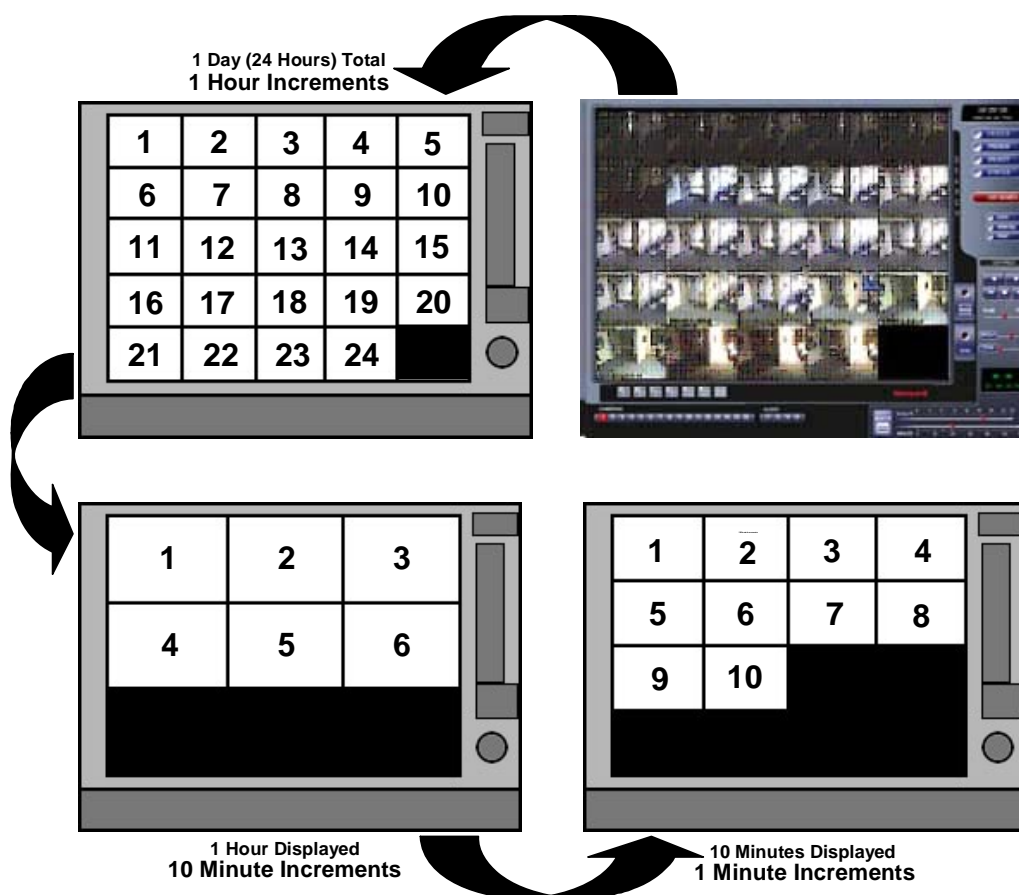
1. Select the **Index Search** button. The Index Search Option box will open.
2. Select a single camera or check the All Cameras option.
3. Select an event to search (sensor, motion, instant record) or select the All Event option.
4. Press **OK**. There may be a delay while results are returned. Results will be displayed in a column on the left side of the screen. If no results are found, "NO IMAGE FOUND" will appear in the column.
5. Once the results are displayed, double-click on any one to search through them.
6. Once the desired image is found, apply it to the Main Search by selecting the **Close** button at the bottom of the results column.



1	<b>Image Display Area</b>	Where Search results images are displayed.
2	<b>Time</b>	Time of the result.
3	<b>Camera Number</b>	Camera number of the returned result.
4	<b>Type</b>	Displays event type: <b>M</b> – Motion <b>S</b> – Sensor <b>IR</b> – Instant Record
5	<b>Search Results</b>	Displays the results of the search. Each line represents a segment of video.

## 6.14 PREVIEW SEARCH

The Preview Search can be used in a number of circumstances to quickly find an exact moment where an event, such as a theft, occurred. The Preview Search basically gives a 24 Hour visual overview of a single camera by separating a 24 hour period (1 day) into 24 images, one image for each hour of the day. The search can then be further narrowed down into ten minute increments and one minute increments by simply selecting one of the images displayed.



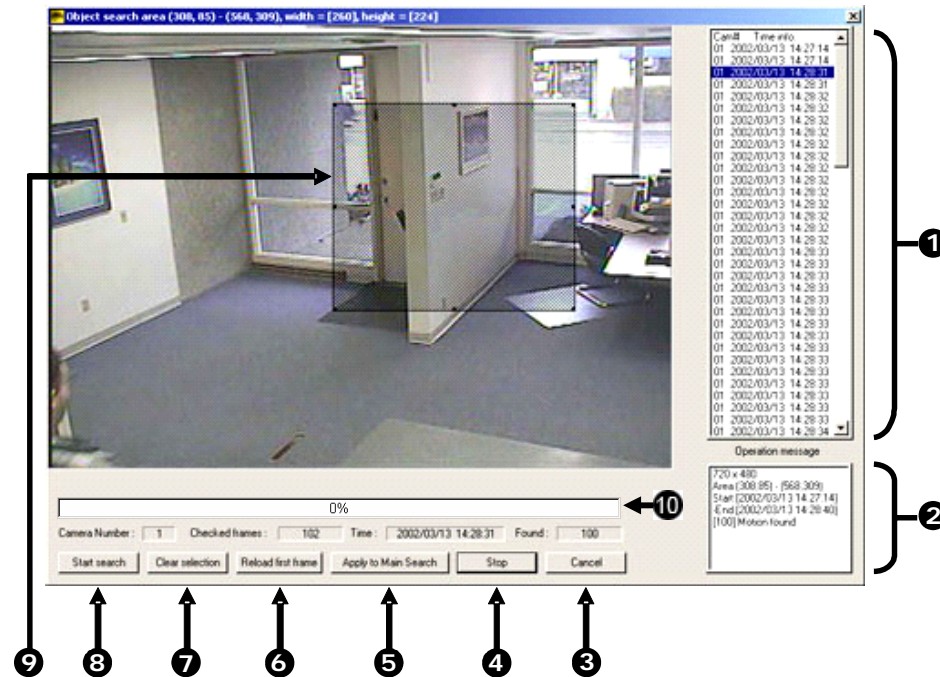
These example images show how the Preview Search functions. The first screen that appears has 24 images displayed. Each image represents the first second of each hour. If there is no image recorded during that period then nothing will be displayed. When an hour is selected (by double clicking on the image) then a new screen appears with 6 images. Each of these images represents a 10 minute segment of video. Once a 10 minute segment is selected (by double-clicking on the image) the final screen appears which breaks down that 10 minute segment into 1 minute increments (10 images).

### 6.14.1 PERFORMING A PREVIEW SEARCH

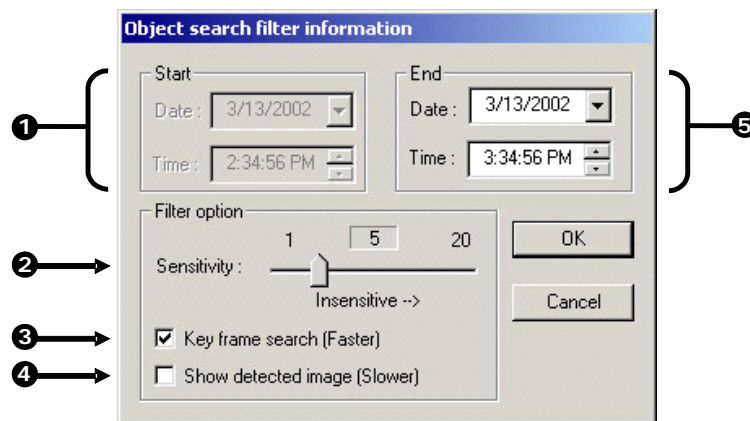
1. Select a single camera, either by turning off all cameras but one or by double-clicking a displayed image.
2. Select the **Preview Search** button. 24 images display.  
If there is no recorded video during a portion of the day, "No Image" will be displayed where the image should be.
3. Refine the search by double-clicking on an image to select it. 6 images display.  
If needed, return to the previous 24 image view by right-clicking on an image.
4. Refine the search by double-clicking on an image to select it. 10 images display.  
If needed, return to the previous 6 image view by right-clicking on an image.
5. Double-click an image to select the 1-minute segment of video to play.  
A single image displays. If needed, return to the previous 10 image view by right-clicking on an image.
6. Use the Play controls to play the video of the selected segment.
7. To exit out of the Preview search with the current image still selected, deselect the **Preview Search** button.

## 6.15 OBJECT SEARCH

Object Search is a powerful Search utility that is used to search a region on the video for any motion changes. The Results are neatly displayed and can be viewed quickly.



1	<b>Search Results</b>	Search results are displayed in this column and listed by date and time. When the search is complete, results can be viewed by double-clicking on one of the results or by using the Up and Down arrow keys on the keyboard.
2	<b>Search Information</b>	Displays brief information on the overall search.
3	<b>Cancel</b>	Exits the Object Search.
4	<b>Stop</b>	Stops the current search.
5	<b>Apply to Main Search</b>	Exits the Object Search but takes the selected result (currently displayed image) and displays it inside the Main Search. From that point, play controls can be used.
6	<b>Reload First Frame</b>	Reloads the initial key frame image (the image used to start the search).
7	<b>Clear Selection</b>	Clears the current motion region box from the key frame image.
8	<b>Start Search</b>	Begins the search.
9	<b>Motion Region Box</b>	The user-defined area of the key frame image. Create the motion region box by clicking inside the image and dragging the mouse. The motion region box can be resized by pulling on the small square boxes located on the outer perimeter of the box.
10	<b>Status Bar</b>	Indicates progress of search being performed.



1	<b>Start</b>	Displays the time and date of the initial key frame.
2	<b>Sensitivity</b>	Used to control sensitivity of the motion to be detected. Poor lighting conditions can often be interpreted as motion; the sensitivity setting can compensate for this.
3	<b>Key Frame Search</b>	Searches by key frame.
4	<b>Show Detected Image</b>	Displays the results as they are found. Using this option slows the search process slightly and therefore may not be ideal when searching large periods of time.
5	<b>End</b>	Used to designate an end time. (Default is 1 hour.)

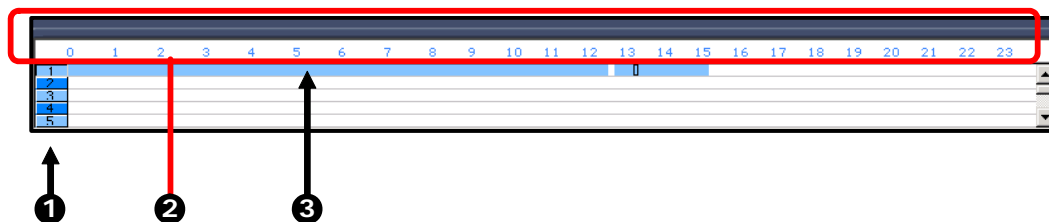
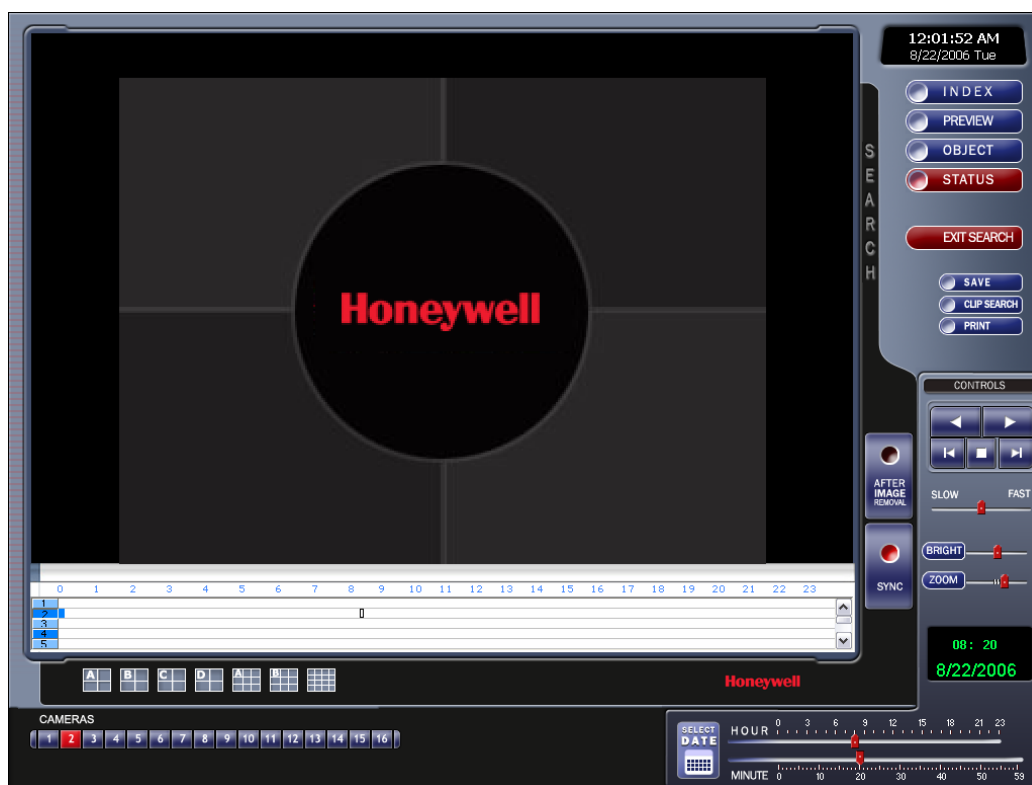


### 6.15.1 PERFORMING AN OBJECT SEARCH

1. Select a single camera, either by turning off all cameras but one or by double-clicking a displayed image.
2. Select the **Object Search** button.
3. Create a motion region box on the image by clicking inside the image and holding down the left mouse button while dragging the pointer. When the desired shape is created, let go of the mouse button. Only one motion region box can be created. To delete the motion region box, press the **Clear Selection** button.
4. Press the **Start Search** button. The Object Filter Search information should open.
5. Select an end time. One hour is the default setting.
6. Adjust the sensitivity if necessary.
7. Click **OK** to begin the search. When results are found, they will be displayed in the column to the right. If no results are found, the search will end and "No Images Found" will display in the column. Press **Stop** to stop a search.
8. When the search has ended, double-click on one of the results. Use the up and down arrows to scroll through the results quickly.
9. When the desired image is found, select **Apply to Main Search** to use the play controls.

## 6.16 STATUS SEARCH

The Status Search option displays video in graph format. (16 Channel Model Show)



1	Camera	Displays the cameras in linear format. Scroll down using the scroll bar on the right.
2	Hours	The hours 0-23 (24 hours) are listed.
3	Recording Block	Displays in blue where video is recorded. Areas of no recording are displayed in white.

### 6.16.1 PERFORMING A STATUS SEARCH

1. Select the **Status Search** button to open the Status Search window.
2. Use the mouse to click on an area of the blue recording block.  
Only one camera can be displayed at a time.

## 6.17 AUDIO

Audio is played back at 48,000Hz.

To play audio with the video:

1. Select a single camera by turning off all cameras but one using the **Camera Select** buttons. The audio buttons will be displayed.
2. Select a single audio channel to play. When an audio channel is selected, the **Time Synch** button will automatically be selected.
3. Press the **Play** button.

## 6.18 POINT OF SALE (OPTIONAL)

The Point of Sale search is an optional component that can be added to the Fusion DVR. When installed and activated, a POS button will appear inside the Search Window.

The POS functionality utilizes TVS technology. When performing a POS search, a TVS window appears allowing multiple options and criteria for detailed searches.

The POS capability provides the following functions:

Perform detailed queries based upon large criteria selections.

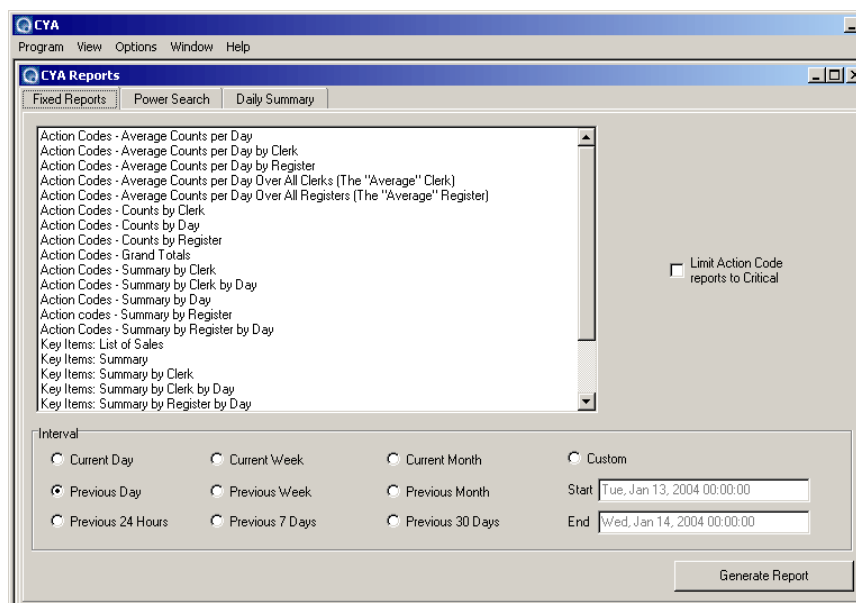
Chart results in a graphical format.

Instantly view video from POS queries.

Access and Search POS data from a remote location. (Requires additional software that can be purchased from TVS)

Interface with most POS interfaces

Interfaces with a large selection of ATM Devices.



The basic premises of a POS search is as follows:

1. Open Search and press the POS Search button.
2. When the CYA window appears enter your search criteria and press the **Generate Report** button.
3. When the results are displayed, simply double-click on a result to display the result in the main Search window.
4. Now play the video, export the video, or perform another advanced search.

Contact your sales representative for more information on adding POS capability.

## SECTION 7

### PAN / TILT / ZOOM

#### 7.1 PAN / TILT / ZOOM OVERVIEW

The PTZ controls within the DVR unit allow for powerful control over the cameras. This can be extremely beneficial by increasing the usefulness of the recorded video. Use the PTZ controls to create custom preset configurations that can continuously sweep across large areas.

#### 7.2 SETTING UP A PTZ CAMERA (120IPS RealTime / 240IPS / 480IPS)

Setting up a PTZ Camera is simple since the DVR unit comes preassembled with an internal RS-485 adapter. For PTZ setup for the 60IPS and 120IPS refer to section 7.3.

RS-485 ADAPTER	
RED	Positive (TX+)
WHITE	Negative (TX-)

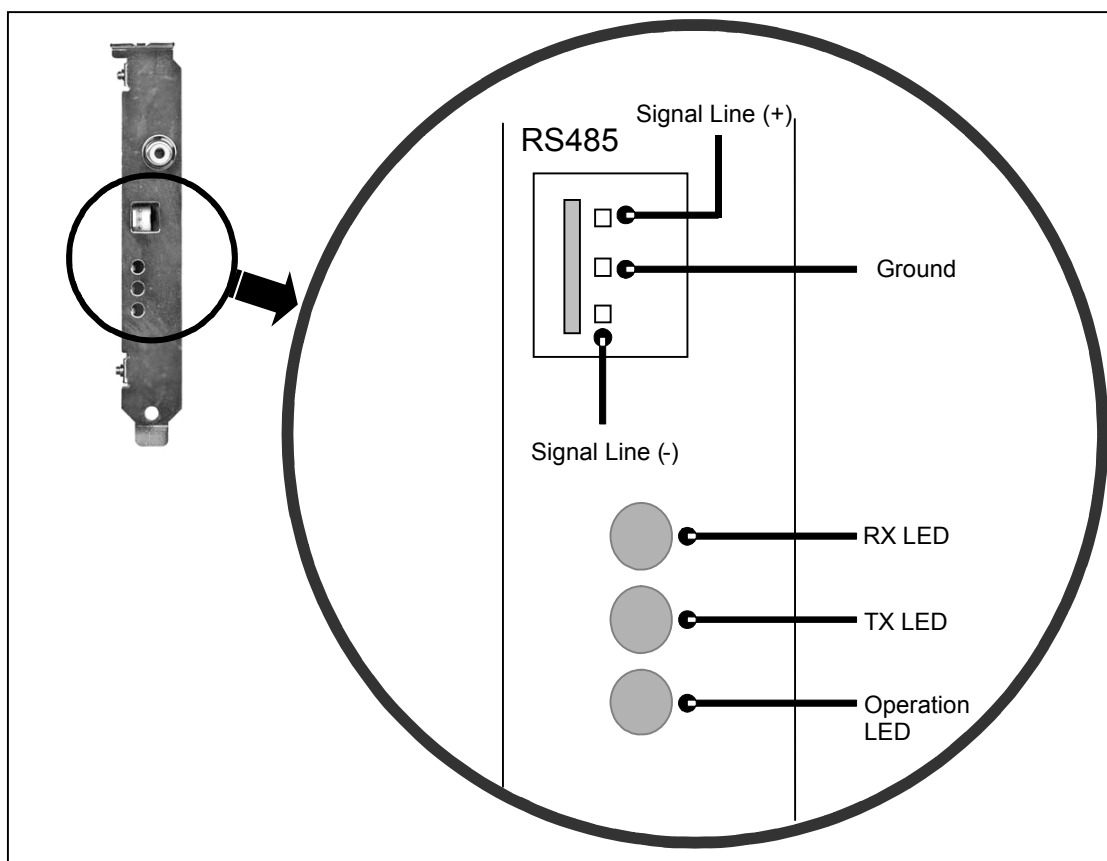
1. Locate the PTZ adapter.  
(Refer to Section 3.1 for assistance identifying the adapter.)
2. Connect the two wires of the PTZ adapter to the PTZ camera. The red wire on the adapter should connect to the RX+ on the PTZ and the white wire should connect to the RX-.
3. Connect the other end of the adapter to the DVR unit as shown
4. Assign the PTZ camera an ID number that coincides with the number assigned to it by the DVR unit.  
Example: If the camera's video is connected to input number 5, set the PTZ unit to ID number 5.
5. Inside the DVR setup, select the PTZ camera using the Camera Selector buttons.
6. Enable the PTZ functions of the camera by placing a check in the **Pan/Tilt Connection** checkbox.



7. Once enabled, the Protocol can be edited. Select the appropriate Protocol.

**NOTE:** Protocols are a set of instructions written by the manufacture of the PTZ cameras that allow software programs such as this DVR to control their functions. The majority of the well established PTZ manufacturers' protocols are included in this software.

8. Press **Apply** and exit Setup.
9. From the Main Display Screen select the **PTZ button** (See Section 4.3 – Display Screen.) The PTZ Control options open.
10. Select the **PTZ camera** to control by clicking on its video on the main display screen. The camera number will appear inside the PTZ controls.
11. Using the PTZ controls, you should now be able to move the PTZ around.



## 7.2.1 SUPPORTED PROTOCOLS

Protocols are added frequently. The supported list may contain new protocols that are not listed here.

The current supported protocols are:

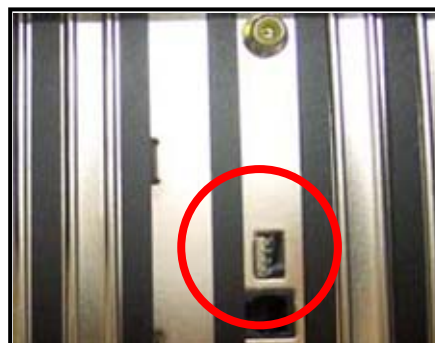
Ademco Rapid Dome	KDC
American Dynamics	LG (LVC-A70x's)
CBC (GANZ)	LG SD-110
C-BEL	LG (LPT-A100L)
Chiper CPT (V9KR Series)	Merit LI-LIN
CNB-AN102	NiceCam
CNB-PTZ100	Panasonic
Computar	Pelco D
Dong Yang Unitech (DRX-502A)	Pelco (P protocol 4800bps)
Dennard	Philips (TC8560 & TC700)
Dynacolor	SAE
Ernitec	Samsung (DRX-502A)
Fastrax II	Samsung (SCC-641)
FilTech (DSC-230/PT-201)	SANTACHI
Fine System (CRR-1600)	Sensormatic SpeedDome
Focvision (KD1602)	SungJin (SJ2819RX)
HMS-250	Toshiba (P protocol 4800bps)
HSCP	Ultrak (HONEYWELL KD6)
Honeywell (HSD-250)	VCL
Inter-M(VRX-2101)	VCL- LEGACY
Javelin (Orbitor)	Vicon
Kalatel (Cyber Dome)	Vicon Surveyor 2000
	Videoalarm
	WonWoo

## 7.3 SETTING UP A PTZ CAMERA (60IPS /120IPS)

Setting up a PTZ Camera is simple since the DVR unit comes preassembled with an internal RS-485 adapter.

RS-485 ADAPTER	
RED	Positive (TX+)
BROWN	Negative (TX-)

1. Locate the PTZ adapter.  
(Refer to Section 3.1 for assistance identifying the adapter.)
2. Connect the two wires of the PTZ adapter to the PTZ camera. The red wire on the adapter should connect to the RX+ on the PTZ and the brown wire should connect to the RX-. Disregard the yellow and orange wires as they are not used.
3. Connect the other end of the adapter to the DVR unit as shown
4. Assign the PTZ camera an ID number that coincides with the number assigned to it by the DVR unit.  
Example: If the camera's video is connected to input number 5, set the PTZ unit to ID number 5.
5. Inside the DVR setup, select the PTZ camera using the Camera Selector buttons.
6. Enable the PTZ functions of the camera by placing a check in the **Pan/Tilt Connection** checkbox.



Enable the PTZ functions of the camera by placing a check in the **Pan/Tilt Connection** checkbox.

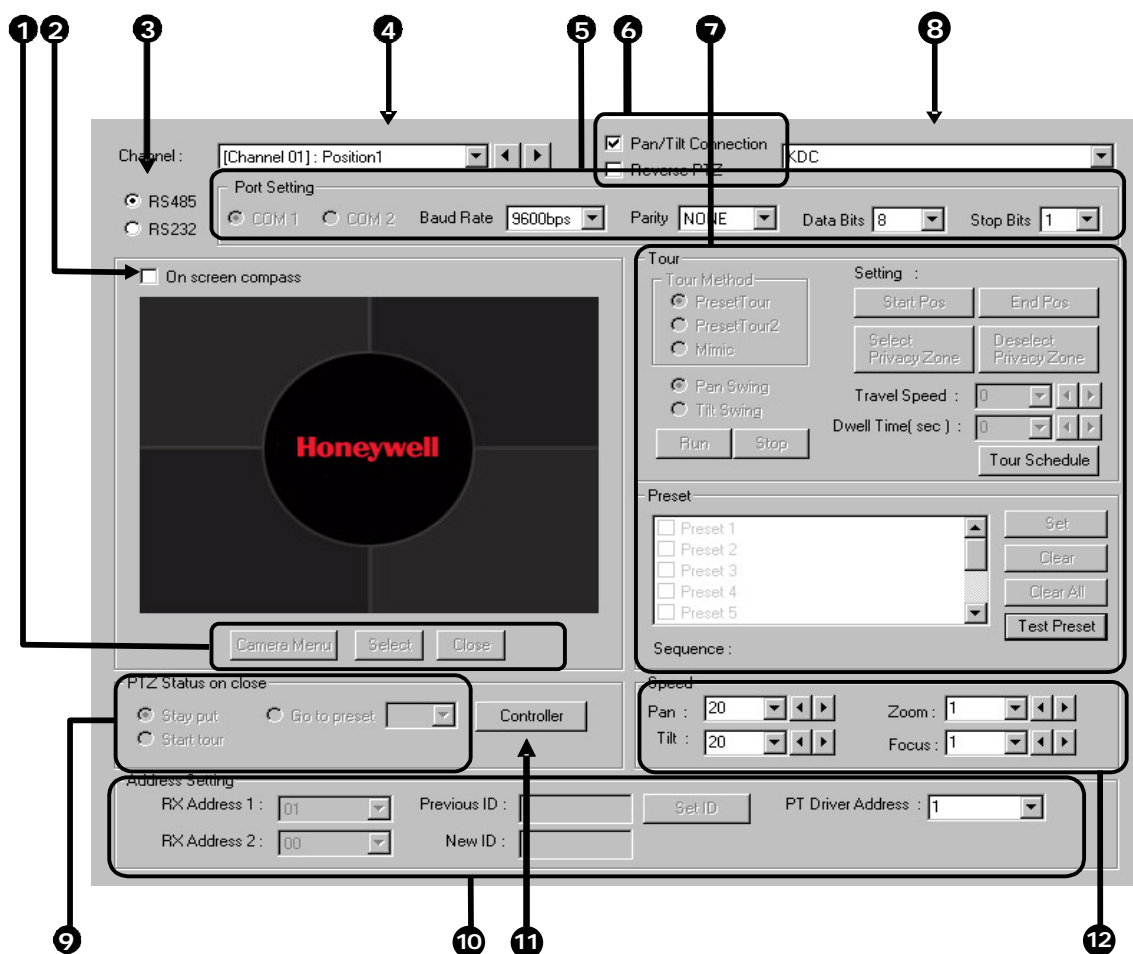
Once enabled, the Protocol can be edited. Select the appropriate Protocol.

**NOTE:** Protocols are a set of instructions written by the manufacture of the PTZ cameras that allow software programs such as this DVR to control their functions. The majority of the well established PTZ manufactures' protocols are included in this software

1. Select the **PTZ camera** to control by clicking on its video on the main display screen. The camera number will appear inside the PTZ controls.
2. Using the PTZ controls, you should now be able to move the PTZ around.



## 7.4 ADVANCED PTZ SETUP



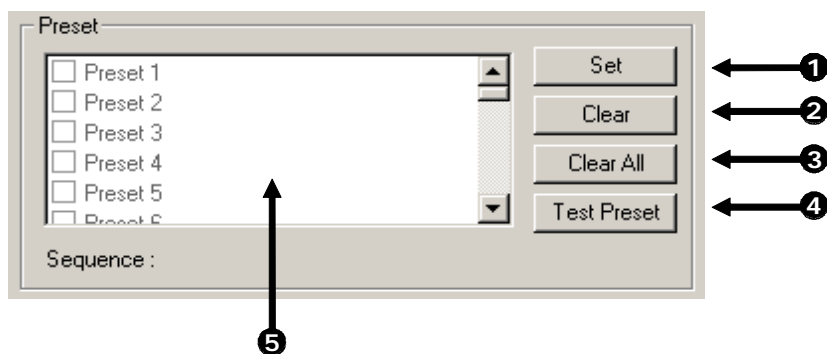
h

1	<b>Camera Menu</b>	Opens the OSD PTZ camera menu.
2	<b>On-Screen Compass</b>	Allows On-Screen control of a PTZ camera.
3	<b>RS-232 / RS-485</b>	Defines how to send the PTZ signal to the camera.
4	<b>Select Camera</b>	Selects the current camera to be edited.
5	<b>Port Settings</b>	Defines the specific settings to transmit to the PTZ.
6	<b>Enable Pan/Tilt and Reverse PTZ</b>	Pan/Tilt Enables the DVR to control the PTZ camera. Reverse PTZ enables the PTZ to have inverse controls.
7	<b>Preset and Tour</b>	Used to create Presets and Tours for the PTZ camera. Since each camera creates these in a different way, there can be multiple methods.
8	<b>Protocol</b>	Selects the protocol to use for the selected camera.

		The protocol is the unique set of instructions that allows the DVR to communicate with the PTZ camera.
<b>9</b>	<b>PTZ Status on Close</b>	This option will activate a Tour or Preset when the PTZ controller is closed.
<b>10</b>	<b>Address Setting</b>	Only available on select PTZ cameras. These options need to be set when there are more PTZ cameras connected together than there are inputs on the DVR. Setting these options allows for attaching several DVRs to the PTZ chain.
<b>11</b>	<b>Open PTZ Controller</b>	Opens the PTZ controller, allowing the PTZ camera to move.
<b>12</b>	<b>Pan Speed</b>	Increases or decreases the Pan speed.
	<b>Tilt Speed</b>	Increases or decreases the Tilt speed.
	<b>Zoom Speed</b>	Increases or decreases the Zoom speed.
	<b>Focus Speed</b>	Increases or decreases the Focus speed.

## 7.5 CREATING AND VIEWING PRESET POSITIONS

A Preset Position is a user-defined location where the camera can be pointed, zoomed in, and focused. Preset positions can be defined and labeled if the camera supports this. Each preset can have an independent Dwell and Speed setting for use with the Tour 2 Function.



1	<b>Set</b>	Once a preset is selected, the <b>Set</b> button records the preset position.
2	<b>Clear</b>	The <b>Clear</b> option deletes the selected Preset.
3	<b>Clear All</b>	This option deletes all Preset Positions.
4	<b>Test Preset</b>	This option tests a selected Preset Position.
5	<b>Preset Positions</b>	This displays the Preset Positions. If a preset is currently used, a check will be placed in the box next to its name.

### 7.5.1 CREATING A PRESET

1. Inside **Setup**, select the PTZ setup option and the camera to edit.
2. Inside the Preset options select a Preset you would like to modify (a red box will appear around the Preset).
3. Use the Pan/Tilt/Zoom/Focus controls to move the selected camera to the desired position.
4. Enter a Dwell Time and Speed setting. This is used for the Tour 2 function (Each Preset can have a different Dwell and Speed setting).
5. Once the camera is in the desired position, press the **Set** button.
6. A window will open for entering a Preset Name. Enter a name and press **OK**.

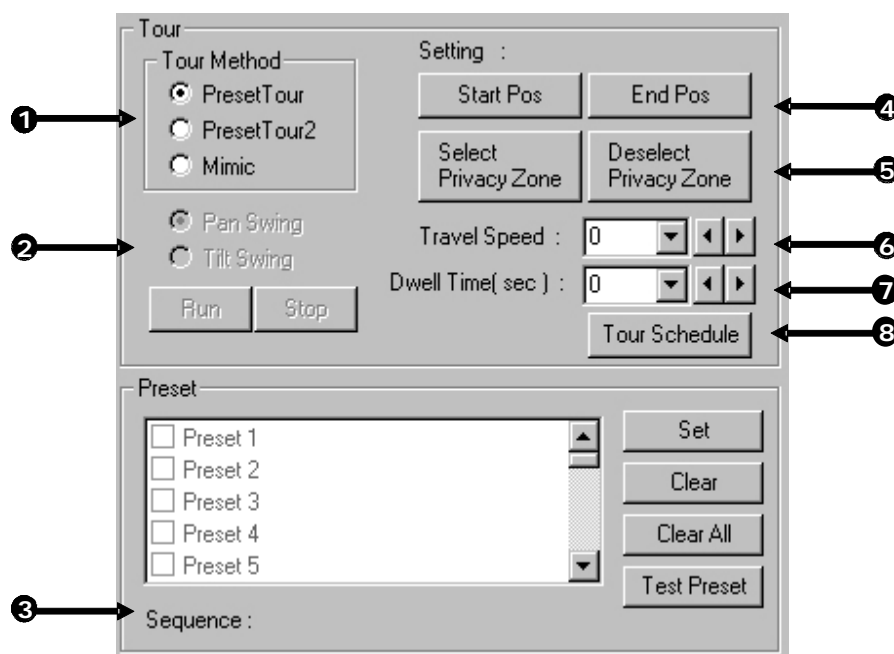


### 7.5.2 VIEWING A PRESET

1. From the Main Display Screen, click on the PTZ camera to select it.
2. Using the keyboard, press the number keys corresponding with the Preset positions. The camera will move to the saved Preset.
3. Presets can also be activated using the on-screen PTZ controller. Open the controller and press a preset button.

## 7.6 UNDERSTANDING TOURS

The following section explains the PTZ Tour options. Not every Tour Method will be available for each PTZ camera.



1	<b>Tour Method</b>	Defines the type of Tour to use.
	<b>Preset Tour</b>	Cycles through the selected Recorded Presets.
	<b>Preset Tour 2</b>	Cycles through the selected Recorded Presets with the addition of a definable Travel Speed and Dwell Time.
	<b>Mimic Tour</b>	This Tour 'mimics' a user-defined motion path, copying everything the user does (including speed).
2	<b>Pan/Tilt Swing</b>	Enables the Pan or Tilt 'Guard Tours'.
3	<b>Sequence</b>	Selects a Preset Sequence from a Drop-Down list. This list is only displayed on supported Protocols.
4	<b>Start/End Position</b>	Starts and Stops recording of PTX actions for the Mimic Tour.
5	<b>Privacy Zone</b>	The Privacy Zone is a definable area that is masked out so it cannot be viewed.
6	<b>Travel Speed</b>	Sets the speed at which a PTZ moves from one Preset position to the next (when using Preset Tour 2).
7	<b>Dwell Time</b>	Defines the length of time (in seconds) that a PTZ Tour stays on a Preset Position (when using Preset Tour 2).

8	<b>Tour Schedule</b>	The Tour Schedule option allows for the setting of a Tour Schedule.
---	----------------------	---

### 7.6.1 CREATING A PRESET TOUR

1. Start by creating two or more Preset Positions. (refer to Section 7.4.1)
2. Select the **Preset Tour** Method. The Preset Tour is now the default Tour method.
3. The Tour is now set to cycle through the defined presets.

### 7.6.2 VIEWING THE PRESET TOUR

1. From the Main Display Screen, select the PTZ option.
2. Select the PTZ camera of the Tour you just created.
3. Press the Tour Button. The Preset Tour will activate.

### 7.6.3 CREATING A PRESET TOUR2

1. Start by creating two or more Preset Positions. (refer to Section 7.4.1)
2. Select the **Preset Tour2** Tour Method. The Preset Tour is now the default Tour method.
3. The Tour is now set to cycle through the defined presets at the specified Travel Speed and Dwell Time defined by the preset tour that is selected in the PTZ setup menu.

### 7.6.4 VIEWING THE PRESET TOUR2

1. From the Main Display Screen, select the PTZ option.
2. Select the PTZ camera of the Tour you just created.
3. Press the Tour Button. The Preset Tour2 will activate.

### 7.6.5 CREATING A MIMIC TOUR

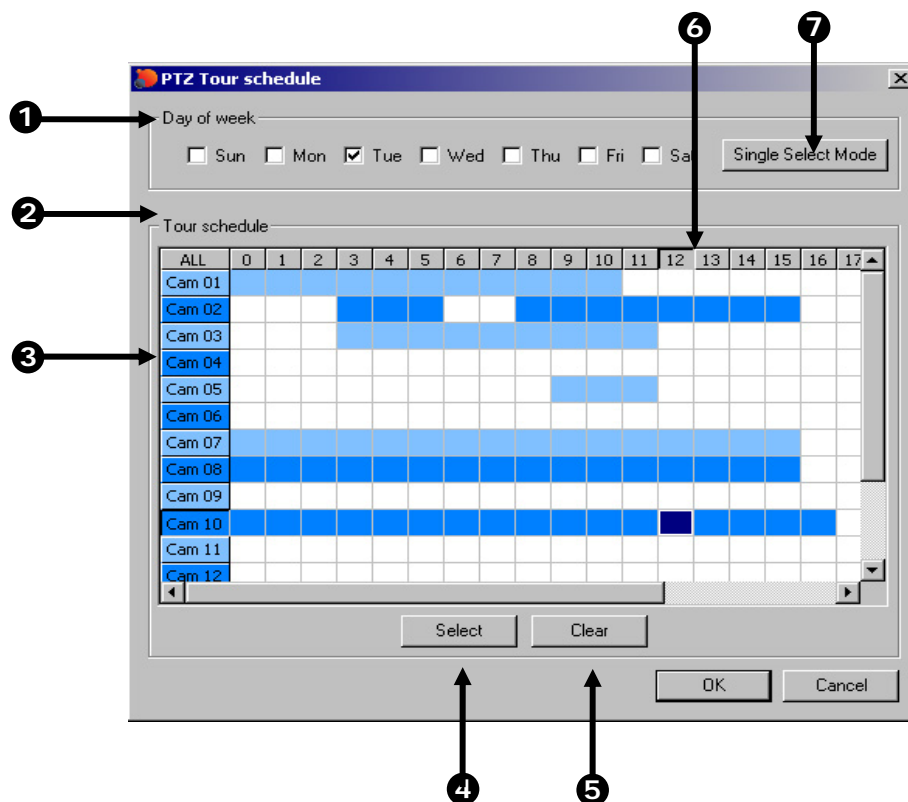
1. Select the **Mimic Tour** Method.
2. Press the **Start Position** button.
3. Using the PTZ Controller, move the PTZ in the path of the tour to mimic.
4. Press the **Stop Position** button when finished moving the PTZ around.
5. Press **OK** or **APPLY** to save.

### 7.6.6 VIEWING THE MIMIC TOUR

1. From the Main Display Screen, select the PTZ option.
2. Select the PTZ camera of the Tour you just created.
3. Press the Tour Button. The MIMIC Tour will activate.

## 7.6.7 PTZ TOUR SCHEDULING

The Fusion DVR provides an option with the PTZ setup called PTZ Tour Scheduling which allows users to specify set tour schedules for PTZ cameras connected to the DVR unit. The Tour Schedule allows for scheduling of specific days of the week and specific hours of the day for multiple PTZ cameras. Selected time frames are designated in blue and non selected (default frames) and shown in white.

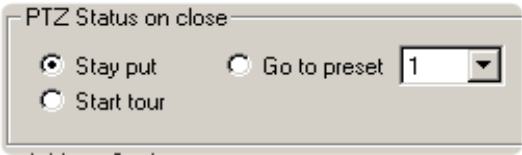


1	<b>Day of the week</b>	This option allows the user to specify which day of the week will be altered in the tour schedule.
2	<b>All</b>	Allows all cameras and hours of the day to be selected.
3	<b>Camera Selection</b>	Shows the set schedule for each camera, by left clicking the camera name all hours can be selected for the camera.
4	<b>Select</b>	Applies a tour for the areas that the user has highlighted.
5	<b>Clear</b>	Allows for the user to clear the designated area that has been highlighted.
6	<b>Hour</b>	Shows the hour of the day and weather is scheduled for recording.
7	<b>Single Select Mode</b>	Allows users to select a single day or multiple days to schedule PTZ touring



## 7.7 PTZ STATUS ON CLOSE

The **PTZ Status on Close** is an option that defines the default settings for a PTZ camera when the controller is not open. This includes activating a Tour, moving to a preset position or simply leaving the camera as it.



Stay Put	This option leaves the PTZ in its present state.
Start Tour	Starts the Pre-Defined Tour function when the on-screen PTZ controller is closed. The Tour that will be activated will be the Tour that is selected.
Go To Preset	Moves to a Selected Preset position when the on-screen PTZ controller is closed.

### 7.7.1 ACTIVATING THE PTZ STATUS ON CLOSE OPTION

1. Start by creating a Preset or Tour for the selected camera.
2. Select either **Start Tour** or **Go To Preset**.
3. Press **OK** or **APPLY** to save.

## 7.8 PTZ ADDRESS SETTING

Some protocols support software address settings. The following section explains these settings.

The screenshot shows a software interface for PTZ address settings. It includes two dropdown menus for RX Address 1 and RX Address 2, both currently set to 01 and 00 respectively. There are also input fields for Previous ID and New ID, a button labeled 'Set ID', and a dropdown for PT Driver Address set to 1.

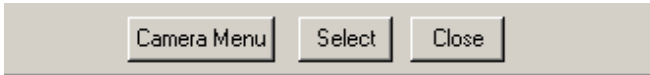
<b>RX Address 1</b>	This option was added for a particular line of receivers that support 2 ID addresses. This is the first RX address.
<b>RX Address 2</b>	This option was added for a particular line of receivers that support 2 ID addresses. This is the second RX address.
<b>Previous ID</b>	This option was added for a particular line of receivers that support 2 ID addresses. This option displays the current RX address ID.
<b>New ID</b>	This option was added for a particular line of receivers that support 2 ID addresses. This option is for entering a new RX address ID.
<b>Set ID</b>	This option was added for a particular line of receivers that support 2 ID addresses. This option is for setting the new RX address.
<b>PT Driver Address</b>	This option is for specifying the PTZ ID address that the PTZ is set to. This option must be set correctly in order for the DVR to communicate with the PTZ. This option can be beneficial when large amounts of PTZ are chained together.

### 7.8.1 ACTIVATING THE PTZ STATUS ON CLOSE OPTION

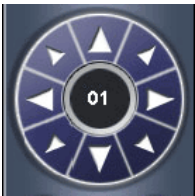
1. Start by creating a Preset or Tour for the selected camera.
2. Select either **Start Tour** or **Go To Preset**.
3. Press **OK** or **APPLY** to save.

## 7.9 ACCESSING PTZ Menus

Some protocols support the ability to access the Internal PTZ Onscreen Menu.



<b>Camera Menu</b>	This option opens the PTZ Camera menu.
<b>Select</b>	This option selects an item on the Onscreen menu.
<b>Close</b>	This option closes the PTZ Onscreen menu.



<b>Up/down</b>	The Up and Down buttons on the PTZ controller move through the PTZ menu options.
<b>Left/Right</b>	The Left and Right buttons on the PTZ controller move through the PTZ menu options and/or highlight options.

Since every PTZ camera is different, the functions of these options can vary slightly.

The Fusion DVR provides an easy way to access the cameras options. For explanations of what those options are please refer to the manual that came with your camera.

### 7.9.1 OPENING AND EDITING THE HONEYWELL KD6 MENU

1. Start by pressing the **Camera Menu** button.  
The camera menu will appear on the video.
2. Use the Up and Down buttons on the PTZ controller to scroll through the menu options.
3. Press the **Select** button to select a menu option.  
Pressing Select will either scroll one menu deeper or it will change a selected option.
4. Press **Close** to scroll one menu back, or if you are at the root menu level, it will close the PTZ menu.

## 7.10 USING THE ON-SCREEN CONTROLLER AND COMPASS

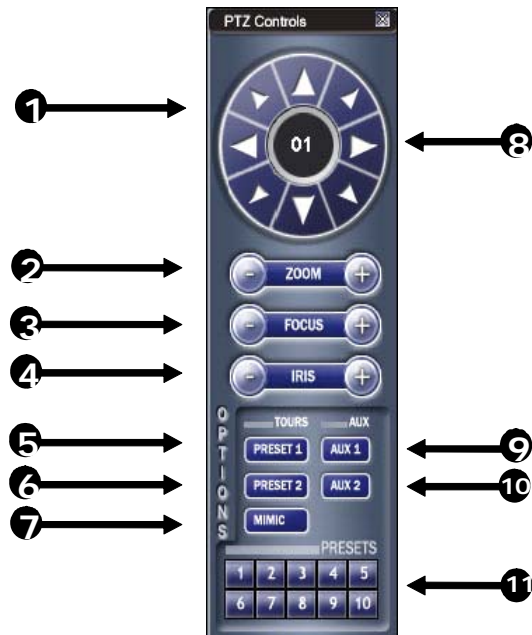
The Fusion DVRs provide control for the PAN/TILT camera in two different ways.

1. Using the Graphical PTZ controller that appears when the PTZ button is pressed on the main screen.
2. Clicking on the video itself. This second option is a much more powerful way to control the Camera. (**NOTE:** The PTZ button on the main screen must also be selected to use this option.)



Control the PTZ by dragging the mouse on the screen in the desired direction. A green line will appear to show the direction the PTZ will move. The shorter the line the shorter the PTZ will move. The longer the line the longer the PTZ will travel in the specified direction.

### 7.10.1 THE PTZ CONTROLLER



1	<b>Direction Controls</b>	There are 8 directions buttons that move the PTZ. <b>NOTE:</b> Only 4 of the buttons work for all protocols (UP, DOWN, LEFT, RIGHT). 8 Directions are available only for select protocols.
2	<b>Zoom</b>	This option Zooms the camera in and out.
3	<b>Focus</b>	This option Focuses the PTZ camera.
4	<b>Iris</b>	This option adjusts the Iris on the PTZ.
5	<b>Preset 1 Tour</b>	This option activates the <b>Preset 1 Tour</b> .
6	<b>Preset 2 Tour</b>	This option activates the <b>Preset 2 Tour</b> .
7	<b>Mimic Tour</b>	This option activates the <b>Mimic Tour</b> .
8	<b>Camera Number</b>	This displays the camera number you are currently controlling. To change the camera, simply click on the video of the camera you wish to control.
9	<b>Aux 1</b>	This option activates a different option for each protocol.
10	<b>Aux 2</b>	This option activates a different option for each protocol.
11	<b>Preset Controls</b>	These buttons activate the corresponding PTZ Preset.

## 7.10.2 AUX BUTTONS

The AUX buttons activate different options for each protocol. The protocols and their options are defined below.

<b>VCL, Ademco Rapid Dome, Javelin (Orbitor), HONEYWELL KD6</b>	AUX 1	Auto Iris
	AUX 2	Auto Focus
<b>Pelco-D, Pelco-P, Kodicom Receiver, CBC, Dennard HONEYWELL KD6</b>	AUX 1	Wiper
	AUX 2	Light

## SECTION 8

### BACKING UP VIDEO DATA

#### 8.1 BACKUP OVERVIEW

The DVR can easily backup important video data to an internal or external media location. The most commonly used forms of this are CD-R/RWs, External USB or FireWire Hard Drives, and Network Drives. Every DVR unit comes standard equipped with a CD-RW drive, FireWire port, USB port, and Network Adapter.

The DVR is capable of performing a backup to multiple CDs when the file sizes exceed the capacity of a single disk. You may also specify multiple locations for backup as well as the order they are recorded to.

The DVR backs up video data using a proprietary compression format that can only be read by the DVR Backup Program. This ensures the integrity of the data.

Throughout the backup process the DVR will continue recording without interruption. This is the result of the tremendous multiplexing power of the DVR unit which allows it to perform virtually all functions without disrupting the recording process.

#### 8.2 NERO® EXPRESS

The DVR unit uses Windows® XP® Embedded running Nero® Express 6.0 to write data to the CD-RW Drive. This solution allows the DVR software to read and write data to the CD-RW Drive without the requirement of formatting the disk first.



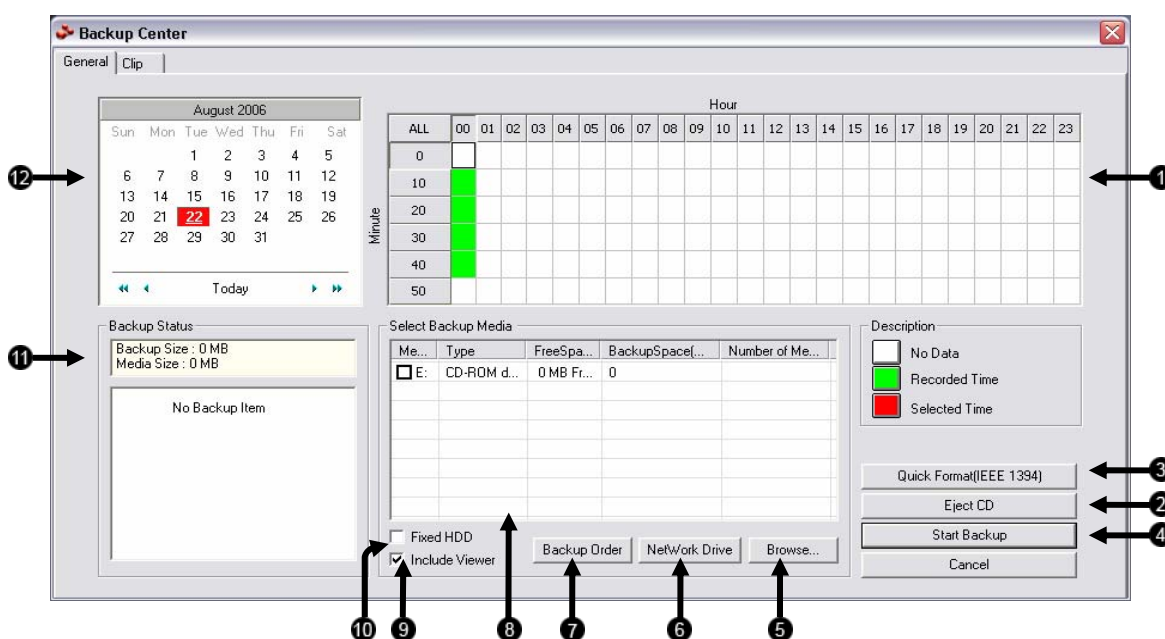
**CAUTION:** Although many features are available within Nero, it is highly recommended that you do NOT use any features other than those necessary for the standard backup of video data as outlined in this section, loss of information or software instability may result.

## 8.3 BACKUP CENTER OVERVIEW

The Backup Center allows you to back up recorded video data from multiple dates and times to one or more locations including the CD-RW drive, Network Storage Locations, and External Hard Drives.

### 8.3.1 GENERAL SCREEN OVERVIEW

The General Screen is used for performing bulk backup of video recorded by all cameras for a selected period or periods of time to a specified storage location.



1	<b>Hour / Minute</b>	Displays recording data in hourly (24 horizontal columns) and 10 minute (6 vertical cells) segments. Green cells indicate time with recorded video. Red cells indicate time selected for backup.
2	<b>Eject CD</b>	Ejects the CD from the System.
3	<b>Quick Format IEEE</b>	Performs a quick format of the attached IEEE (1394) device.
4	<b>Start Backup</b>	Initiates the Backup process.
5	<b>Browse</b>	Opens a menu for adding backup drives or folders not displayed in the Select Backup Media Menu.
6	<b>Network Drive</b>	Allows browsing to and selecting of a remote network location for backing up video to.

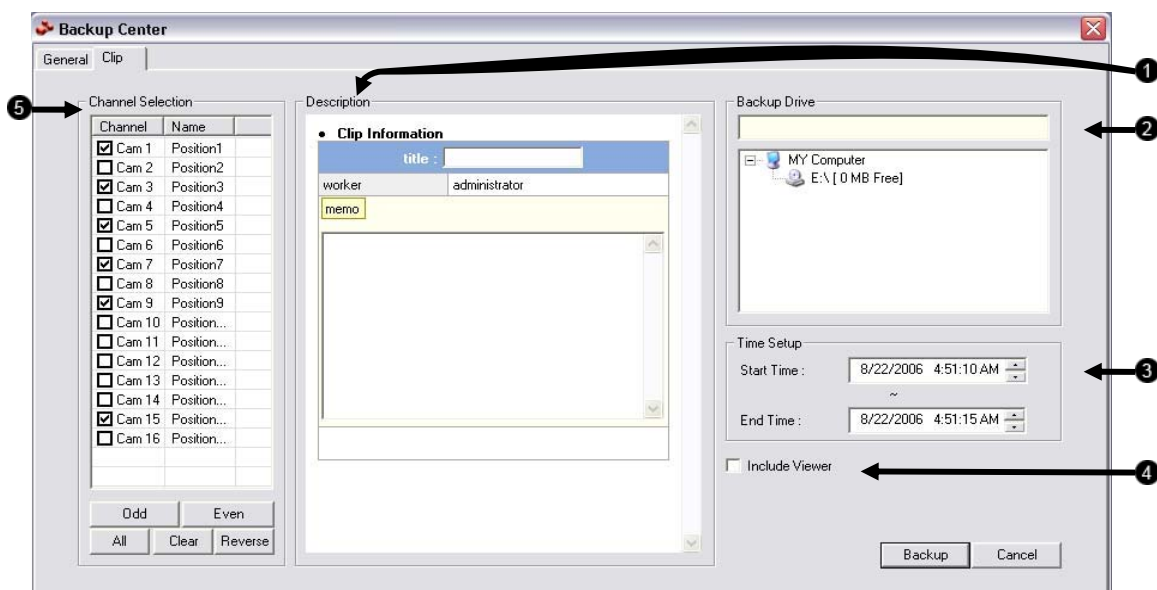


<b>7</b>	<b>Backup Order</b>	Allows setting of the order in which drives are used for backing up data to.
<b>8</b>	<b>Select Backup Media</b>	Allows selection of drives and folders to back up video to.
<b>9</b>	<b>Include Viewer</b>	When checked, copies the Backup viewer application onto the CD or DVD being used for backup and sets the disc to auto run the viewer.
<b>10</b>	<b>Fixed HDD</b>	When checked, displays all hard drives on the system.
<b>11</b>	<b>Backup Status</b>	Displays the size of all video currently selected for backup, the available size of the media currently selected for backup to, and the dates and times of video currently selected for backup.
<b>12</b>	<b>Calendar</b>	Select a date to back up video from, blue highlights indicate dates with recorded video in them.

### 8.3.2 CLIP SCREEN OVERVIEW

#### CLIP SCREEN OVERVIEW

The Clip Screen is used for backing up video recorded by individual cameras for a selected period of time to a specified storage location.



1	<b>Description</b>	Enter information to be stored and displayed with the backup.
2	<b>Backup Drive</b>	Selects the drive to backup video to.
3	<b>Time Setup</b>	Sets the start time and stop time of video being backed up.
4	<b>Include Viewer</b>	When checked, copies the Backup viewer application onto the CD or DVD being used for backup and sets the disc to auto run the viewer.
5	<b>Channel Selection</b>	Select individual cameras for backup. With buttons for selecting odd, even, all, or reversing the current camera selection.

## **8.4 PERFORMING A REGULAR BACKUP**

1. Click the Backup Button on the Main Display Screen.
2. Select the date or dates you wish to back up video from using the calendar. Dates highlighted in blue contain recorded data.
3. Select the blocks of time you wish to back up using the Hour/Minute menu. Blocks of time with recorded video are highlighted in green. Blocks of time selected for backup are highlighted in red.
4. Select the drive or drives to save the backup video to using the Select Backup Media Menu, Network Drive Button, or Browse Button.  
When selecting the CD-RW Drive you must specify the number of CDs to use for backup.
5. Set the backup order using the Backup Order Button.
6. Check the Include Viewer Checkbox if you wish to include the Backup Viewer Application.
7. Click the Start Backup Button to begin the backup process.  
You will be returned to the Main Screen and a progress bar will be displayed in the lower right corner of the screen.

## **8.5 PERFORMING A CLIP BACKUP**

1. Click the Backup Button on the Main Display Screen.
2. Click the Clip Tab at the top of the Backup Center Screen.
3. Set the Backup Time and End Time of the video to backup in the Time Setup Box.
4. Select the Cameras you wish to back up in the Channel Selection Box.
5. Select the Backup Drive you wish to save the backup video to.
6. Check the Include Viewer Checkbox if you wish to include the Backup Viewer Application.
7. Enter pertinent clip information into the Clip Information section in the Description Box.
8. Click the Start Backup Button to begin the backup process.  
You will be returned to the Main Screen and a progress bar will be displayed in the lower right corner of the screen.

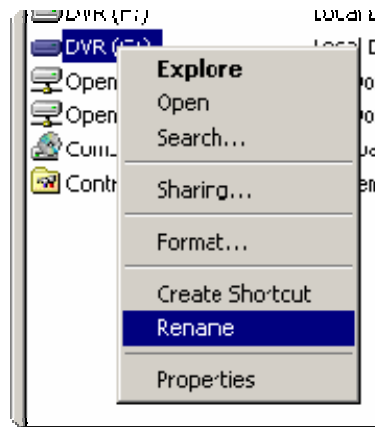
## 8.6 PERFORMING A SCHEDULE BACKUP

1. Click the Backup Button in the Main Menu in the Main Display Screen.
2. Click the Schedule Tab at the top of the Backup Center Screen.
3. Set the Backup Time to perform the backup.
4. Set the Repeat Backup Time to specify the number of hours between backup procedures (between 1 and 24 hours).
5. Select the Backup Drive you wish to save the backup video to using the Select Backup Media Menu or the Network Drive Button.  
To save to a local drive or partition you must first rename the location "Backup"
6. Check the Overwrite on Disk Full checkbox if you wish to overwrite previous scheduled backups when the disk becomes full.
7. Click the Save Backup Setting Button to save the current backup setting and return to the Main Display Screen.

### 8.6.1 SPECIFYING SCHEDULED BACKUP DRIVES

In order to use the Scheduled Backup feature one or more storage drives or partitions connected to the DVR must be labeled as a backup drive.

1. Exit and restart in Windows mode.
2. Double click the **My Computer** icon on the DVRs desktop. A file menu will be displayed.
3. Right click on the drive you wish to specify as a backup drive for Scheduled Backup and select the Rename option. Rename the drive to 'Backup'. Repeat this process for all drives you wish to use for Scheduled Backup. To remove a drive from use for Scheduled Backup, change its name to something besides 'Backup'.



4. Restart the application and return to the Schedule Tab in the Backup Center Window.

## **8.7 ENABLING SCHEDULED BACKUP**

1. Exit the server application and restart in Windows Mode.
2. Open the V-Format utility from the Start Menu > Programs > Fusion Folder.
3. Click the Conform Windows System Password Button.
4. Enter the Administrative User Name and Password of the system into the Confirm System Password Prompt which appears on screen.
5. Click the OK Button to close the Confirm System Password Prompt.
6. Click the OK Button to close the DVR Utility Application.
7. Restart the DVR.



## SECTION 9

### LAN / ISDN / PSTN CONNECTIONS

#### 9.1 LAN OVERVIEW

The DVR unit can easily be connected to a Local Area Network (LAN) and uses Microsoft's® powerful and secure Windows® XP Operating System. This allows for easy and well-documented instructions on setting up LAN connections no matter what type of LAN you want to use.

A LAN is a group of computers and other devices dispersed over a relatively limited area and connected by a communications link that allows one device to interact with any other on the network. Local Area Network is also called LAN.

Examples of LAN connections include Ethernet, Token Ring, cable modems, DSL, FDDI, IP over ATM, IrDA (Infrared), wireless, and ATM-emulated LANs. Emulated LANs are based on virtual adapter drivers such as the LAN Emulation Protocol.

There are a vast amount of reasons why using Microsoft® Windows® XP is far superior to other platforms when running on a LAN. The number one reason is security. Running the DVR on a secure network is important to prevent unwanted users from gaining access to confidential information. Unwanted users can compromise the integrity of the confidential data being stored and viewed, and in extreme circumstances can cause irreparable damage to the network.

Since connecting the DVR unit to a network can be extremely complex (depending on the network), this Fusion DVR manual will cover only the basics. It is suggested that you consult your Vendor or IT Administrator before attempting to create or connect to a LAN.

#### 9.2 CONNECTING TO A LAN USING TCP/IP

The networking options of the DVR unit can create and edit all Network settings available on Windows XP Embedded. The DVR unit comes equipped with a 10/100 Network Interface Card (NIC). This card uses a standard RJ-45 connector.

The DVR unit comes preconfigured with an IP Address of [172.25.2.1] and a subnet mask of [255.255.0.0]. These IP settings will work for many users. If these IP settings are sufficient then re-configuring TCP/IP will not be necessary.

### 9.2.1 CONFIGURING TCP/IP SETTINGS

1. Exit and restart in Windows mode.
  2. Right-click on the **My Network Places** icon located on the desktop and select **Properties**. The Network and Dial-Up Connections window opens.
  3. Right-click **Local Area Connections** and select **Properties**. The Local Area Connection Properties window opens.
  4. Select the **Internet Protocol (TCP/IP)** by clicking on it once. Once it is highlighted, select the **Properties** button. The Internet Protocol (TCP/IP) Properties window opens.
  5. Select **Use the Following IP Address** option. Enter the IP Address and Subnet mask appropriate for your network. It is recommended to contact your Network Administrator for appropriate IP settings.  
Example: Common IP addresses are 10.0.0.25  
Common Subnet masks are 255.255.255.0
- NOTE:** In order to connect to the DVR unit through a remote LAN connection, a static IP address must be assigned. If the network assigns the IP address automatically (DHCP), contact the Network Administrator for help assigning a static IP address.
6. If the network requires specifying your DNS information, enter it now by selecting the appropriate DNS options.
  7. When finished configuring the TCP/IP settings close the **Internet Protocol (TCP/IP) Properties** window by clicking the **OK** button.<sup>1</sup>
  8. Close the **Local Area Connection Properties** window by clicking the **OK** button.
  9. It may be required to restart Windows for the changes to take effect. Restart windows by selecting START on the desktop and selecting Restart.

### 9.2.2 CONNECTING THE DVR TO A LAN

Using a standard RJ-45 cable, plug one end into a Hub (or Network Jack ultimately connected to a hub) and the other end into the DVR unit.



## SECTION 10

### Digital Signature Verifier

#### 10.1 DIGITAL VERIFIER

JPG images and AVI video files that are exported from the Digital Video Recorder are automatically embedded with a Digital Signature. Digital Signatures are a way to verify the authenticity of the images to ensure that they have not been tampered with or edited in any way. Included on the Software Installation CD supplied with the DVR unit is the Digital Signature verification program. This program can be installed on any computer and simply loads an image in question

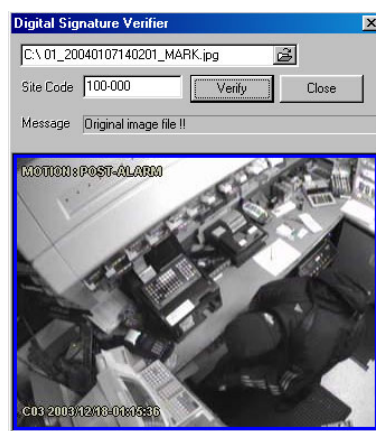
#### 10.2 INSTALLING THE DIGITAL VERIFIER

1. Insert the Software Installation CD into the CD-ROM.  
(Do not install on the DVR unit.)
2. Select the Digital Verifier option to begin installation.  
When the **Welcome** screen appears, select **Next**.
3. When the **Setup Complete** window appears select **Finish**.  
Setup is now complete.

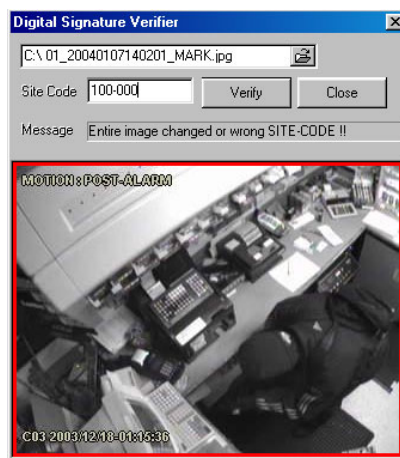
### 10.3 USING THE DIGITAL VERIFIER

1. Open the Digital Signature verification program by selecting **Start → Programs → FUSION → Digital Signature Verifier → Digital Signature Verifier**.
2. Select the **Browse** button to load the JPG or AVI file.
3. Enter the **Site Code** of the DVR unit that the image was originally extracted from.
4. Click the **Verify** button to continue or **Close** to close the window without verifying.

If the image has not been tampered with, the program will display a message that says **“Original image file.”**



If the image has been tampered with, then a red square will be drawn around the image and a message will appear saying **“Entire image changed or wrong SITE CODE.”**

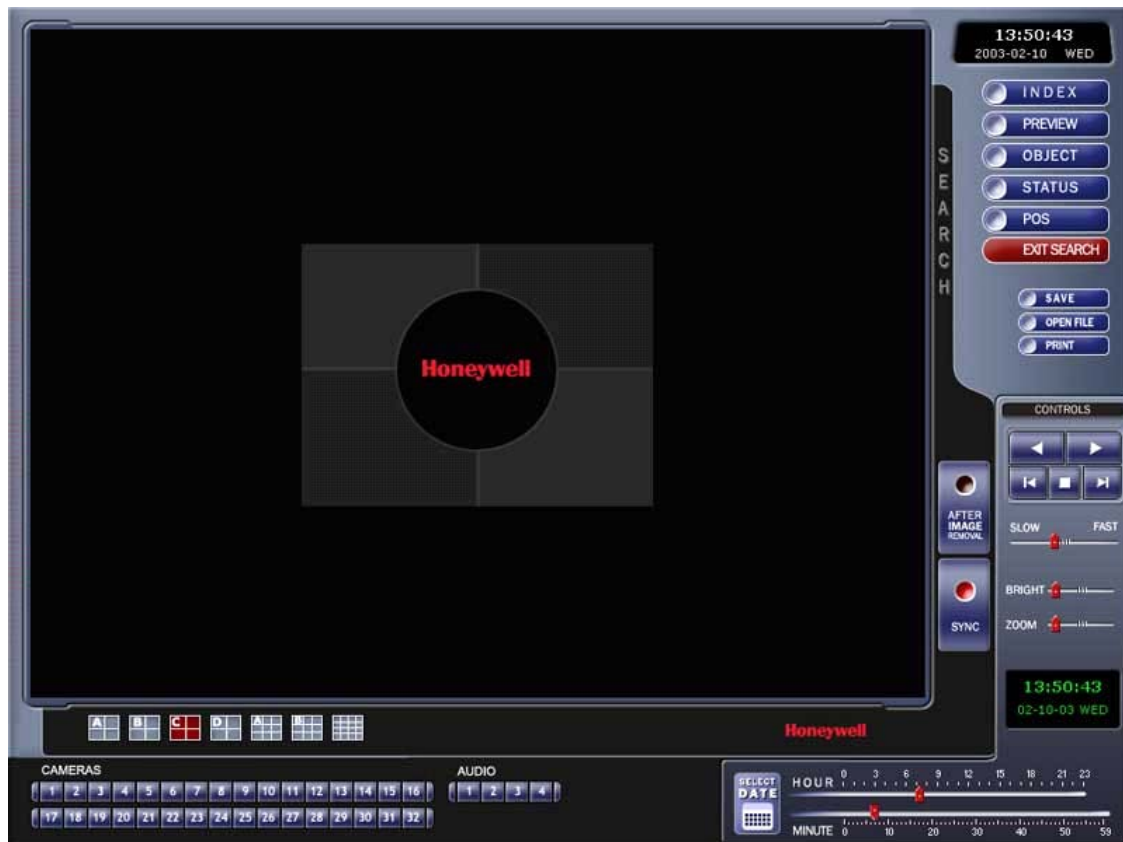


## SECTION 11 PROPRIETARY VIEWER

### 11.1 PROPRIETARY VIEWER OVERVIEW

The Proprietary Viewer plays back the exported video in its proprietary format. Video saved in this format is extremely difficult to tamper with and therefore is the ideal solution when law enforcement and legal departments are involved. This video cannot be read by any other viewer.

The Proprietary Viewer is essentially the Search portion of the DVR software. For detailed explanation of these functions, refer to Section 6.



## 11.2 INSTALLING THE PROPRIETARY VIEWER

1. Insert the Software Installation CD into the CD-ROM.  
(Do not install on the DVR unit.)
2. Select the Proprietary Viewer option to begin installation.  
When the Welcome screen appears, Click the Next Button
3. When the Choose Destination Location window appears Click the Next Button.  
This will install the Proprietary Viewer in the default destination folder.
4. When the Select Program Folder window appears Click the Next Button.
5. Select either 16 or 32 channel option depending on the Model you have.  
You can always reinstall and change this option at a later date. Click the Next Button.

If you have purchased the TVS POS Remote option from TVS then select the YES option. Otherwise select the NO option. Click the Next Button.

6. When this window appears click the Finish Button.

## 11.3 LOADING VIDEO FROM CD-ROM OR HARD DRIVE

1. Open the Proprietary Viewer program by selecting **Start → Programs → DVR → Proprietary Viewer → Proprietary Viewer**.
2. Select **Backup Search** (see Section 6.7 – Performing a Basic Search) and the **Choose time to Search** window opens.

3. For CD-ROM data, select the appropriate CD-ROM drive letter from the **Backup Media** box.

For hard drive data, select either an attached hard drive from the **Backup Media** box or select the **Open Folder** icon which allows you to browse to the specified directory.

Once selected, any available video data will be displayed in the **Choose Start Hour** box.

4. Click on the desired time to select it.
5. Press **OK**.

The video will now load into the Proprietary Viewer. To view the video, follow the instructions for searching as described in Section 6.



NOTES:

## **SECTION 12**

### **ALARM MONITOR**

#### **12.1 ALARM MONITOR OVERVIEW**

The Alarm Monitor software is a utility that streams video across a Local Area Network to a Client PC when an alarm is detected on the DVR unit. The video that streams across can be stopped, played forwards and backwards, in slow motion or real speed.

The utility is loaded at startup and placed in the taskbar. It constantly monitors for a signal from the DVR unit. When an alarm signal is detected the Alarm Monitor Image Viewer window opens and starts playing the video from the camera associated to the alarm.

#### **12.2 INSTALLING THE ALARM MONITOR**

- 1** Insert the Software Installation Disc into the CDROM. (Do not install on the DVR unit) Select the Alarm Monitor option to begin installation and accept the license agreement.
- 2** Follow the on screen instructions.
- 3** Click the Finish Button to complete the installation.

## 12.3 CONFIGURING THE DVR

To enable the Alarm Monitor on the DVR follow these steps:

1. Enter SETUP and click the **Recording Schedule** tab.
2. Assign the desired sensors to the desired cameras. Refer to the Recording Schedule section of this manual for in depth instructions on how to do this.
3. Enable Sensor Event and/or Motion Event in the Alarm Options Section of each schedule number you wish to send alarm events to the Alarm Monitor.

**NOTE:** The Remote Alarm and Emergency Alarm options are used by the more advanced FVMS multi site management and control software.

4. Enter the IP Address of the computer running the Alarm Monitor software.
5. Click the **Network** tab and make sure that Disable Remote Control is not checked.
6. The Alarm Monitor uses the Emergency Port to transfer the data through. The port can be adjusted inside the Network Menu if necessary. It is recommended that unless the port must be changed, that the default setting should be used.
7. Click the **Sensor** menu tab.
8. Configure the Sensors you have assigned to cameras.
9. Click OK.

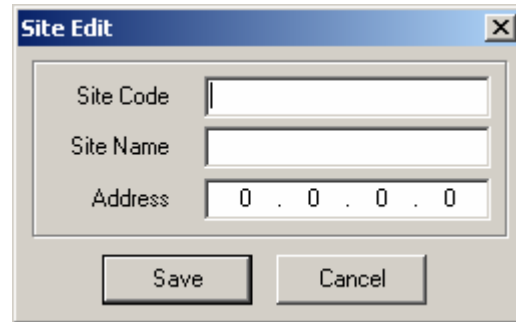


## 12.4 CONFIGURING THE CLIENT PC

All configuration takes place in the Alarm Monitor Window on the Client PC for descriptions and locations of the buttons and features of the Alarm Monitor window Refer to the Alarm Monitor Window section later in this chapter.

- 1 Open the Alarm Monitor window on the Client PC.  
Start >Programs > Fusion > Alarm Monitor > Alarm Monitor

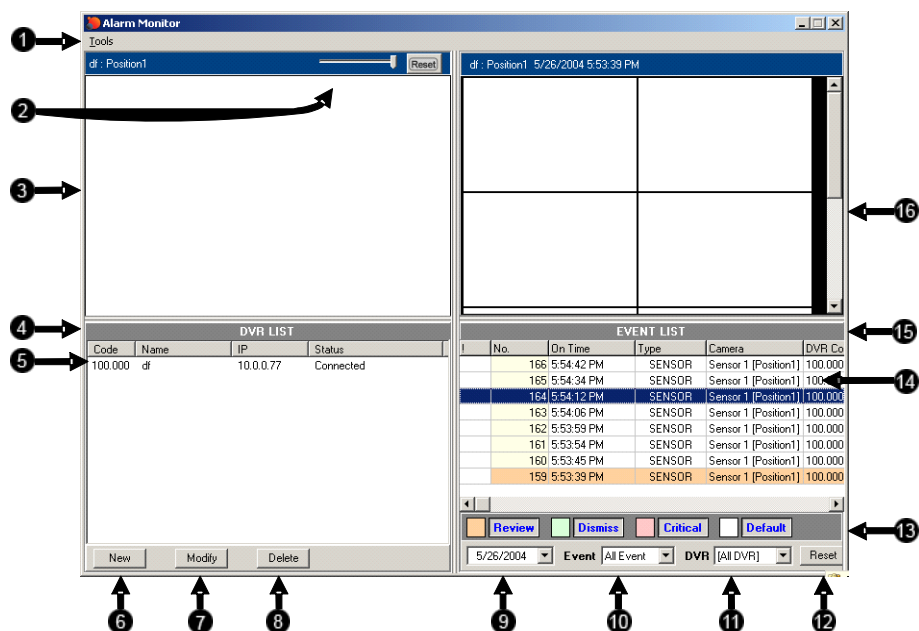
- 2 Click New in the DVR List and enter the site code, site name, and IP Address of the DVR you wish to connect to in the Site Edit window that opens. Click Save



**Note:** The site code can be found under the information tab in the setup menu.

- 3 Click the Tools menu and select Setup.
- 4 Confirm that the Listen Port in the **Configuration Window** is set to the same number as the Emergency Port in **Communication Settings** on the DVR. If the numbers are different adjust the Listen Port on the client PC to match the DVR.
- 5 Click Enter
- 6 Reboot the Client PC

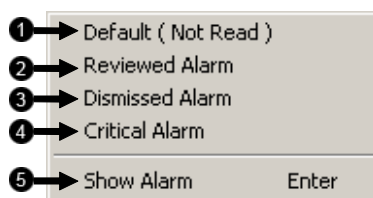
## 12.5 ALARM MONITOR WINDOW



1	<b>Tools Menu</b>	Opens the Setup (Configuration) window and Opens or Closes the Event List.
2	<b>Zoom</b>	Zoom in or out of the displayed video or reset to default.
3	<b>Video Display</b>	Displays the Video feed coming from the DVR.
4	<b>DVR List</b>	Lists all DVR units you have connected to the Alarm Monitor.
5	<b>DVR List Item</b>	Individual DVR unit in DVR List with displayed settings.
6	<b>New</b>	Opens Site Edit window to connect new DVR to Alarm Monitor.
7	<b>Modify</b>	Opens Site Edit to allow modification of selected DVR List Item.
8	<b>Delete</b>	Deletes selected DVR List Item.
9	<b>Date</b>	Selects date of events to display in the Event List.
10	<b>Event</b>	Selects type of Event to Display in the Event List.
11	<b>DVR</b>	Selects DVR to display in the Event List.
12	<b>Reset</b>	Resets Date, Event, and DVR fields to defaults.

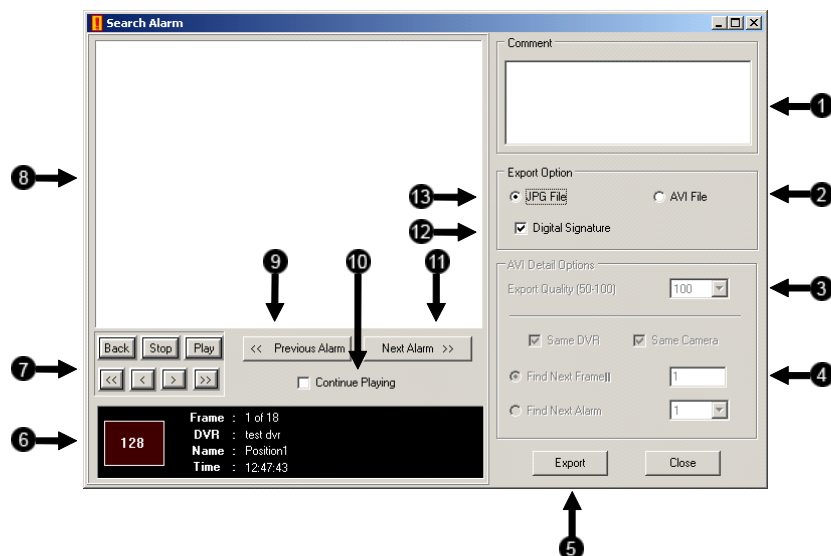
13	<b>Event Filter</b>	Filters Events based on the Alarm Status assigned to them. Click a filter to show or hide the associated events. Right click an event to assign it an Alarm Status.
14	<b>Event List Item</b>	Individual Event in Event List. Double-Clicking on an event opens the associated video in the Search Alarm window.
15	<b>Event List</b>	Lists all recorded events matching the Date, Event, and DVR settings.
16	<b>Event Preview</b>	Displays a preview image of all recorded events matching the Date, Event, DVR, and Filter settings.

### 12.5.1 EVENT LIST RIGHT CLICK



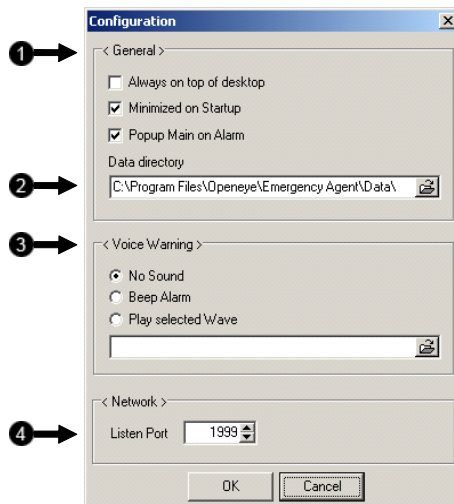
1	<b>Default</b>	Sets an alarm event to Default.
2	<b>Reviewed Alarm</b>	Sets an alarm event to Reviewed.
3	<b>Dismissed Alarm</b>	Sets an alarm event to Dismissed.
4	<b>Critical Alarm</b>	Sets an alarm event to Critical.
5	<b>Show Alarm</b>	Opens event in the Search Alarm Window.

## 12.6 SEARCH ALARM WINDOW



1	<b>Comment</b>	Provides space for user to add comments to video events.
2	<b>AVI File</b>	When selected a video clip exported when Export is clicked.
3	<b>Export Quality</b>	Adjusts the image quality of exported AVI video files.
4	<b>Export Options</b>	Export options for AVI video export.
5	<b>Export</b>	Exports AVI or JPG file to selected location.
6	<b>Alarm Event Information Display</b>	Displays the event number and pertinent recorded information related to the alarm event.
7	<b>Playback Controls</b>	The play controls allow you to play the video forward, backwards, and frame by frame.
8	<b>Display</b>	Displays video playback.
9	<b>Previous Alarm</b>	Moves to previous Alarm Event.
10	<b>Continuous Playing</b>	Enables playback through all alarm events when video playback is initiated.
11	<b>Next Alarm</b>	Moves to next Alarm Event.
12	<b>Digital Signature</b>	Adds a digital signature to the exported JPG image for use with the Digital Signature Verifier.
13	<b>JPG File</b>	When selected a JPG image is exported when Export is clicked.

## 12.7 CONFIGURATION WINDOW



1	<b>General</b>	Offers configuration of basic display options for the Alarm Monitor window.
2	<b>Data Directory</b>	Sets the location that recorded video footage is saved.
3	<b>Voice Warning</b>	Offers several configuration settings for activating an audible indicator when the Alarm Monitor receives an event.
4	<b>Listen Port</b>	Indicates the port which the Alarm Monitor uses to listen for incoming events. This number should be changed to the same number as is set in the Emergency Port in <b>Communication Settings</b> on the DVR.

NOTES:

## SECTION 13

### REMOTE SOFTWARE

#### 13.1 FUSION REMOTE SOFTWARE OVERVIEW

The DVR unit was specifically designed to be fully operated and maintained remotely. It connects using the standard TCP/IP protocol through connection types such as DSL, Cable Modem, T1, ISDN, 56K Modem, LAN, and more. The Fusion Remote software provides for viewing live video, searching through archived video, exporting images and video clips; and provides virtually full Setup control.

##### Highlights:

- Search archived video
- View live video
- Export images and video clips
- Control relay outputs
- Setup administration

##### Basics:

The DVR can have up to 5 Simultaneous remote Connections. Each user can perform functions on the DVR unit and will not affect the other users. The only exception to this is accessing Setup. Only one user is allowed to access setup at any given time. The Frames per Second passed to the Remote Client varies greatly depending on the connection type and speed.

In order to log in to the DVR server, a user account must be made for the user. This ensures that only authorized personnel are allowed to log in. In addition, each user can be assigned different privileges that allow them or deny them access to different functions. (See Section 5.9 – User Management.) For example, a user can be denied Searching and Setup privileges and only granted access to view cameras 4, 8 and 16.



It is highly recommended that users not be granted Setup privileges since this can pose a security risk. Only properly authorized Administrators should have access to Setup.

The Remote software operates virtually the same way as the DVR itself. Its appearance matches the DVR almost identically, however, there are a few minor differences. Some search features are not available (such as the Index and Object Searches) as well as some Setup options.

### 13.1.1 REMOTE CLIENT MINIMUM REQUIREMENTS

- Pentium 233 or equivalent
- 32MB System Memory
- DirectX 8 or higher
- Compatible video card (ATI Preferable)
- Internet or LAN Connection (56K, DSL, Cable Modem, T1, ISDN, etc.)
- TCP/IP installed
- Microsoft® Windows® 98, Me, 2000, or XP Operating System
- 1024 x 768 display resolution
- 16 Bit color depth or better

### 13.1.2 REMOTE CLIENT RECOMMENDED REQUIREMENTS

- Pentium IV 1.5+ or equivalent
- 256MB System Memory
- DirectX 8 or higher
- Compatible video card (ATI Preferable)
- Internet or LAN Connection (DSL, Cable Modem, T1, ISDN, etc.)
- TCP/IP installed
- Microsoft® Windows® 2000 or XP Operating System
- 1024 x 768 display resolution
- 32 Bit color depth or better



## 13.2 SETTING UP THE SERVER TO ACCEPT INCOMING CONNECTIONS

In order to access the DVR unit remotely, the DVR Server must be setup to allow remote connections.

1	<b>Disable Remote Control</b>	Enables/Disables acceptance of remote connections by the DVR server.
2	<b>Time Out Value</b>	Specifies a value (in seconds) to wait for a signal from the Fusion Remote Client. If a signal is not received by that time, the connection is dropped.
3	<b>Center Port</b>	Used by the DVR to transfer the connection data.
4	<b>Image Port</b>	Used by the DVR to transfer the image data.
5	<b>Search Port</b>	Used by the DVR to transfer the search data

### 13.2.1 CONFIGURING THE DVR SERVER TO ACCEPT REMOTE CONNECTIONS

1. Enter **Setup** on the DVR unit.
2. Open the **Network menu**.
3. Uncheck the **Disable Remote Control** option.  
You should now be allowed to adjust port settings if necessary.

**NOTE:** If a Firewall is being used, it may be necessary to adjust the port settings on both the DVR and the Firewall. Contact the Network Administrator for more information.

4. Press **OK**.
5. Make sure a **User** account is created.  
Without a user account, the **Administrator** account must be used.

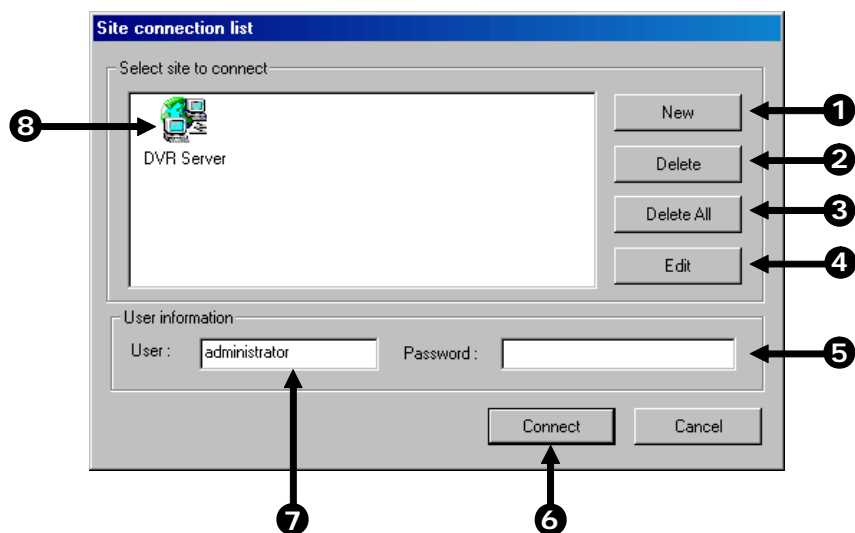
The DVR server is now ready to receive incoming connections.

## **13.3 SETTING UP THE FUSION REMOTE SOFTWARE**

### **13.3.1 INSTALLING THE FUSION REMOTE SOFTWARE**

1. On the Client computer, insert the Honeywell Fusion Software CD into the CD-ROM. The CD should play automatically.
2. When prompted, select the Install Fusion Remote Software option. Follow the installation instructions carefully.
3. When the software finishes installing, close any open installation windows.

### 13.3.2 CREATING A NEW REMOTE CONNECTION



1	<b>New</b>	Creates a new site to connect to.
2	<b>Delete</b>	Deletes the selected site once it is selected from the list.
3	<b>Delete All</b>	Deletes all listed sites.
4	<b>Edit</b>	Used to edit a site once it is selected from the list.
5	<b>Password</b>	Enter the logon password.
6	<b>Connect</b>	Connects the Fusion Remote Client to the Server.
7	<b>User</b>	Enter the Login Username.
8	<b>Site</b>	Displays a list of pre-configured sites.

1. Select **Start → Programs → DVR → Center → DVR Center**.  
The Honeywell Fusion Center Software opens and a Site Connection List window opens.
2. Press **New** to open the **Site Detail Information** window.
3. Enter the **Site Code** and **Site Name**. The **Site Code** will be the name displayed inside the connection box to help identify the unit.
4. Enter the **IP Address** of the DVR server.  
By default the DVR unit is set to connect using DHCP.
5. Enter the **Center Port**. This setting is specified on the server (See Section 13.2.)
6. Press **OK**.
7. Click on the newly created connection and enter the login username and password.
8. Press **Connect**.

NOTES:

## SECTION 14

### THE WEB VIEWER

#### 14.1 WEB VIEWER OVERVIEW

The DVR unit allows access to the video using Microsoft® Internet Explorer® Browser 5.5 and later

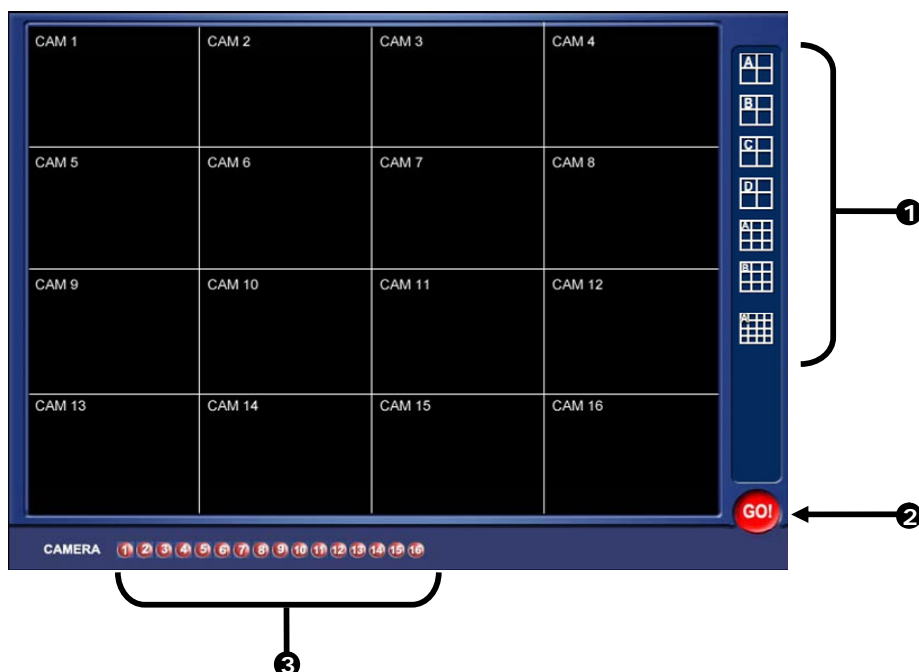
##### **Highlights:**

- View Live Video from most computers
- Username and Password protected
- Easy to use graphical interface

##### **Basics:**

75 users can access the Web DVR simultaneously. The Web DVR is an easy secure way to view live video from virtually any computer with an internet connection using Microsoft Internet Explorer.

In order to log in to the DVR server, a user account must be made for the user. This ensures that only authorized users are allowed to log in. In addition, each user can be assigned different privileges that allow them or deny them access to different functions.



1	<b>Screen Division Buttons</b>	Allows view of one or more sets of cameras at a time. They are organized in several different groups such as 1x1, 4x4, and 8x8.
2	<b>GO!</b>	Activates the commands
3	<b>Camera Buttons</b>	Enable or disable selected cameras for use when searching.

### 14.1.1 CONFIGURING THE DVR SERVER TO ACCEPT REMOTE CONNECTIONS

1. Enter **Setup** on the DVR unit.
2. Open the **Network menu**.
3. Uncheck the **Disable Remote Control** option.  
Adjust port settings if necessary.

**NOTE:** If using a Firewall, it may be necessary to adjust the port settings on both the DVR and the Firewall. Contact the Network Administrator for more information.

4. Check the **Enable Web Viewer** option.  
Again, adjust port settings if necessary
5. Press **OK**.
6. Make sure a **User** account is created.  
Without a user account, the **Administrator** account must be used.

The DVR server is now ready to receive incoming connections.

### 14.1.2 CONNECTING TO A DVR WITH THE WEB VIEWER

1. Open Microsoft® Internet Explorer® 5.5 or later.
2. Enter the IP address of the DVR into the **Address Bar**.
3. When attempting this for the first time a window will open and ask for approval to accept an Active X installation. Select **Yes** to this.  
**NOTE:** If a message is received saying your Internet Explorer® security settings do not allow for downloading Active X components then adjust the browser security settings. One way to do this is to add the IP address of the DVR to your trusted sites list inside Internet Explorer® settings. Contact the System administrator for additional help with adjusting Internet Explorer® settings.
4. When the Web Viewer finishes loading select one or more cameras (or select a screen division button).
5. Press GO!.
6. A login window will appear. Enter a **Username** and **Password** that is authorized to access the DVR.
7. The cameras will now be displayed.

### 14.1.3 CLOSING THE WEB VIEWER

1. To exit the Web Viewer simply close Internet Explorer®.

NOTES:



## SECTION 15 TECHNICAL SPECIFICATIONS

### 15.1 FUSION III 8-CHANNEL

	NTSC	PAL
<b>CPU</b>	Intel® 3.2+ GHz CPU	
<b>Storage (Hard Drive)</b>	250 GB Standard / Virtually Unlimited Storage Potential	
<b>Storage MAX</b>	Up to 4HDD with CD-RW	
<b>Operating System</b>	Microsoft® Windows® XP Embedded	
<b>Viewing Rate</b>	Max 480 FPS	Max 480 FPS
<b>Recording Rate (240 IPS)</b>	Max 240 FPS	Max 200 FPS
<b>Digital Control Output</b>	8	
<b>Sensor Input</b>	8	
<b>Resolution</b>	720x480 / 720x240 x 360x240	720x576 / 720x288 / 360x288
<b>Image Compression</b>	MJPEG	
<b>Average File Size</b>	360x240 – 3~5k	
	720x240 – 4~8k	
	720x480 – 7~12k	
<b>Video Inputs</b>	8 CH (BNC)	
<b>Looping Outputs</b>	8 (BNC) – Each can be terminated (75Ω)	
<b>Composite Outputs</b>	RCA	
<b>Video Outputs</b>	SVGA	
<b>Max FPS Per Channel</b>	30 FPS	
<b>Motion Detection</b>	Up to 5 Regions Per Channel / Adjustable Sensitivity	
<b>Remote Operation</b>	Full Remote Control through PSTN, ISDN, ADSL, LAN, and TCP/IP	
<b>Remote Software</b>	Compatible with Microsoft Windows 2000, XP	
<b>PAN / TILT / ZOOM</b>	Built-in RS-422/485 Interface	
<b>Recording Mode</b>	Continuous, Motion Detection, Sensor, Scheduled Recording	
<b>Backup</b>	USB, CD-RW (DVD Optional)	
<b>Digital Signatures</b>	Supports Digital Signatures	
<b>Alarm Monitor</b>	Transmitted through TCP/IP – FVMS	

## 15.2 FUSION III 16-CHANNEL

	NTSC	PAL
<b>CPU</b>	Intel® 3.2+ GHz CPU (2.8 GHz for 120 FPS unit)	
<b>Storage (Hard Drive)</b>	250 GB Standard / Virtually Unlimited Storage Potential	
<b>Storage MAX</b>	Up to 4 HDD with CD-RW	
<b>Operating System</b>	Microsoft® Windows® XP Embedded	
<b>Viewing Rate</b>	Max 480 FPS	Max 480 FPS
<b>Recording Rate (120 IPS)</b>	Max 120 FPS	Max 100 FPS
<b>Recording Rate (240 IPS)</b>	Max 240 FPS	Max 200 FPS
<b>Recording Rate (480 IPS)</b>	Max 480 FPS	Max 400 FPS
<b>Digital Control Output</b>	16	
<b>Sensor Input</b>	16	
<b>Resolution</b>	720x480 / 720x240 x 360x240	720x576 / 720x288 / 360x288
<b>Image Compression</b>	MJPEG	
<b>Average File Size</b>	360x240 – 3~5k	
	720x240 – 4~8k	
	720x480 – 7~12k	
<b>Video Inputs</b>	16 CH (BNC)	
<b>Looping Outputs</b>	16 (BNC) – Each can be terminated (75Ω)	
<b>Composite Outputs</b>	RCA	
<b>Video Outputs</b>	SVGA	
<b>Max FPS Per Channel</b>	30 FPS	
<b>Motion Detection</b>	Up to 5 Regions Per Channel / Adjustable Sensitivity	
<b>Remote Operation</b>	Full Remote Control through PSTN, ISDN, ADSL, LAN, and TCP/IP	
<b>Remote Software</b>	Compatible with Microsoft Windows 2000, XP	
<b>PAN / TILT / ZOOM</b>	Built-in RS-422/485 Interface	
<b>Recording Mode</b>	Continuous, Motion Detection, Sensor, Scheduled Recording	
<b>Backup</b>	USB, CD-RW (DVD Optional)	
<b>Digital Signatures</b>	Supports Digital Signatures	
<b>Alarm Monitor</b>	Transmitted through TCP/IP – FVMS	

**15.3 FUSION III 32-CHANNEL**

	NTSC	PAL
<b>CPU</b>	Intel® 3.2+ GHz CPU	
<b>Storage (Hard Drive)</b>	250 GB Standard / Virtually Unlimited Storage Potential	
<b>Storage MAX</b>	Up to 4 HDD with CD-RW	
<b>Operating System</b>	Microsoft® Windows® XP Embedded	
<b>Viewing Rate</b>	Max 480 FPS	Max 480 FPS
<b>Recording Rate (240 IPS)</b>	Max 240 FPS	Max 200 FPS
<b>Recording Rate (480 IPS)</b>	Max 480 FPS	Max 400 FPS
<b>Digital Control Output</b>	16	
<b>Sensor Input</b>	16	
<b>Resolution</b>	720x480 / 720x240 x 360x240	720x576 / 720x288 / 360x288
<b>Image Compression</b>	MJPEG	
<b>Average File Size</b>	360x240 – 3~5k	
	720x240 – 4~8k	
	720x480 – 7~12k	
<b>Video Inputs</b>	32 CH (BNC)	
<b>Composite Outputs</b>	RCA	
<b>Video Outputs</b>	SVGA	
<b>Max FPS Per Channel</b>	30 FPS	
<b>Motion Detection</b>	Up to 5 Regions Per Channel / Adjustable Sensitivity	
<b>Remote Operation</b>	Full Remote Control through PSTN, ISDN, ADSL, LAN, and TCP/IP	
<b>Remote Software</b>	Compatible with Microsoft Windows 98, Me, 2000, XP	
<b>PAN / TILT / ZOOM</b>	Built-in RS-422/485 Interface	
<b>Recording Mode</b>	Continuous, Motion Detection, Sensor, Scheduled Recording	
<b>Backup</b>	USB, CD-RW (DVD Optional)	
<b>Digital Signatures</b>	Supports Digital Signatures	
<b>Alarm Monitor</b>	Transmitted through TCP/IP – FVMS	









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